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ABSTRACT

This document consists of the four issues of "Tempo," the newsletter of the Texas Association for the Gifted and Talented (TAGT), published during 1999. Each issue focuses on a specific theme, including distinguished achievement programs, Hispanic issues in gifted education, creativity, and gifted children in the new millennium. Articles include: "Distinguished Achievement Programs: What Does Research Say?" (Susan Johnsen); Depth and Complexity at the Secondary Level" (Evelyn Hiatt); "Whiz Kids: The Texas Academy of Mathematics and Science" (Nancy Kolsti); "Creating Nations, Learning Diplomacy" (Todd Martin); "G/T Seminars: Enrichment, Extensions, Networking" (Cynthia Specia Shade); "Independent Boarding Schools: An Educational Alternative" (Patsy Kumekawa); "SAEGAR Workshop: Advanced Language Arts & Reading for Junior High" (Gayle Roome and Donna Cole); "The WAVE that's Changing the Tide: An Intermediate Magnet Program" (Candace Silcott and Melinda Wycoff); and "Reaping the Benefits of International Baccalaureate" (Lynn Crawford and Karen Phillips); "TEACHING Up to the Needs of the Gifted English Language Learners" (Sandra Kaplan); "Early Entry College Experiences from the Perspective of Gifted Hispanic Students" (Donna Fleming and others); "Maximizing High Potential in Hispanic Students" (Dorothy Sisk); "A Different Approach to Creativity Enhancement" (Jane Piirto); "The Complexity of Creativity" (Shirley Porter); "Using CPAM--The Creative Product Analysis Matrix" (Mary Nied Phillips); "What the Research Says about Creativity" (Susan Johnsen); "Successful Intelligence and the Gifted" (Robert J. Sternberg); "The Role of Authentic Learning in Developing Gifts and Talents: A How-To Guide" (Joseph S. Renzulli); "Toward the Next Generation of Programming for Talent Development (Donald J. Treffinger and others); "Creative Ways To Identify Young Gifted Children" (Joan Franklin Smutny); "Looking for Needles in a Haystack: Disadvantaged Gifted" (Mary Caubel and others); and "Researchers' Reflections on the Field of Gifted

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Education: Issues for the New Millennium" (Susan Johnsen). (Articles contain references.) (CR)

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TEMPO

TEXAS ASSOCIATION FOR THE GIFTED AND TALENTED

VOLUME XIX, ISSUES 1-4

WINTER-FALL 1999

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Tempo

Volume XIX Issue 1

TEXAS ASSOCIATION FOR THE GIFTED AND TALENTED
Member, National Association for Gifted Children (NAGC)

Winter 1999 Issue
Distinguished Achievement Programs

Distinguished Achievement Programs: *What Does Research Say?*

Susan Johnsen

This review focuses on research that evaluates possible Distinguished Achievement Programs such as accelerated or advanced classes, in- depth studies, International Baccalaureate, computer-based advanced classes, mentorships, classes for students identified through talent searches, and classes that are delivered via distance learning. Articles published in *Gifted Child Quarterly, Journal for the Education of the Gifted, Roeper Review,* and *The Journal for Secondary Gifted Education* during the past ten years were examined. For the most part, those that had empirical or data-based support were included.

The literature strongly supports the use of advanced or accelerated classes at the middle school and high school level. Students who accelerate tend to perform well in subsequent courses, complete college, and attend graduate school in numbers that exceed the national average. They do not seem to burnout, but retain their interest in learning and receive more awards and honors in school. Equally important, these students do not appear to suffer from any social or emotional adjustment problems. These accelerated courses may be offered in separate classes at the high school or middle school level, in dual enrollment courses, in summer talent search programs, through individualized computer programs, or through distance learning. Distance learning courses are particularly helpful for small schools who may not have the resources to offer advanced courses. For example, the North Carolina School of Science and Mathematics offers seven university courses to more than 200 high school students in 20 remote sites. A module, presented for 60 minutes or less, is followed-up by a home school teacher. Researchers report that accelerated students are able to complete one-year science courses in a three-weeks summer period and four years of high school mathematics or literature in two years of middle school.

The second area that appears to be strongly supported in the literature is the use of mentors. In fact, Terman concluded that every successful person has a mentor who may have changed the course of his or her life. Mentors are generally professionals who have an expertise in a particular field and work with students over a long period of time. They may be in the community or within

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From the President
School Choice *Where Do We Stand?*

Colleen Elam

Given:

•We know that gifted students learn at a faster pace, seek greater depth of knowledge, and interpret information at more complex levels than the vast majority of students.

•We know that each gifted child is an individual with strengths and weaknesses in the varied academic fields.

•We know that gifted students require differentiated educational programs to realize their potential to self and society.

•We know that gifted students are a heterogeneous group of cultures, ethnicities, socioeconomic backgrounds, home environments, personal motivation levels, and academic ability levels.

Given:

Our mission as the Texas Association for the Gifted and Talented is to promote awareness of the unique social, emotional, and intellectual needs of gifted and talented students and to impact the development of appropriate educational services to meet these needs.

Therefore:

We must support an array of educational service choices for our gifted and talented students and we must encourage our students to pursue the options that enable them to reach their maximum potential.

OUR RIGHT TO CHOOSE

In the United States, we have come to consider choice our right. We choose our government, our religion, our careers, our friends. We choose our residences, our cars, our clothes, and our food.

In Texas, by law we may choose the public school our children attend, the school district in which they enroll, and even the teacher and class in which they register. We believe that it is the right of parents to seek the best education for their children. Yet in reality, many school districts actively discourage parent choice of school, few school districts accept students from outside of their boundaries, and teacher selection is taboo. School districts are "closed." Schools are "closed." Classes are "closed."

We must truly believe that we are serving all of the students in their assigned schools. We do work diligently to make our schools work for all of the students includ-

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Tempo
Volume XIX Issue 1 Winter1999

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The 76th Legislative Session

Connie McLendon

The 76th session of the Texas Legislature is set to begin on January 12, with long time legislative pundits agreeing that property tax reform and funding for public education will again be debated. There is consensus that education is the top priority this session, and nearly everyone agrees that the 76th session will center around money and how to allocate it. The debate is expected to intensify with the news release on January 8 by newly-elected Comptroller Carole Rylander who says the amount of "new money" the legislature will have to spend on programs will be $5.6 billion instead of the earlier projected $6.3 billion. Under state law, legislators will base the 2000-2001 budget, which begins September 1, on the state comptroller's revenue estimate.

Senator Bill Ratliff, whose reappointment as chair of the powerful Senate Finance Committee is expected, has said that when the increased cost of existing state obligations are considered, about $2 billion should be available for new spending. He estimates that all spending for the 2000-2001 budget cycle will likely be between $90 billion to $95 billion. The hopes that many groups held for increased funding and new programs were dimmed by the new revenue forecast.

In terms of education, where is the new money likely to go? Governor Bush wants to increase the state's share of education funding by providing $2 billion **in local property tax relief**. With average pay for Texas teachers lagging more than $5000 behind the national average, legislators and nearly all educational groups will push for a **teacher pay raise** to bring salaries to the national average. Several legislators want to increase opportunities for financially needy students to attend college and keep the state's brightest and best students in Texas colleges and universities. One plan approved by a House interim committee would make available about $250 million for **post-secondary grants, scholarships, financial aid and work study programs**. This plan would benefit mostly needy students.

A Senate Interim Committee recommends aid for all good students, even those from middle-or upper-income families. This plan would run about $500 million, according to committee estimates. (This is the same Senate Interim Committee report that recommended restructuring the **gifted and talented allotment** by directing the TEA to use the money, formerly distributed to local districts under this allotment, to establish funding awards for schools that raise the number of students completing a college preparatory curriculum or Advanced Placement courses.) This may give a clue as to where legislators will be searching for money to implement the post-secondary financial support program! You may recall from reading the fall issue of the *TAGT Newsletter* that association leaders were on top of this situation immediately. We were assured by Committee staff that no one on the Senate Interim Committee had plans to file legislation on the G/T recommendation. To date no one has, but we remain vigilant.

The outlook for this legislative initiative enjoys support on both sides of the political aisle as a significant number of both Republicans and Democrats would like to provide additional money to expand college opportunities for all financially or academically worthy students. This initiative is driven by the Hopwood ruling, which seriously impacts state university affirmative action programs. **TAGT supports this recommendation as long as funding for it does not come from the state G/T allotment**.

Other debate topics certain to interest and concern the education community include the governor's proposal to **end social promotion**. There is general agreement that advancing a student to the next grade when the student is not prepared academically is unacceptable, but discussion on how this problem should be addressed is resulting in an intense debate among lawmakers and special interest groups. A **voucher program**, allowing parents to use state tax money to pay tuition at private or parochial schools, will be hot topic again this session. Teacher organizations and most other education-related organizations oppose vouchers. Those "in the political know" say to look for a compromise between lawmakers who support ending social promotion and those who oppose a state-funded voucher program.

E-mail vs. Other Forms of Communication

A newspaper poll of key lawmakers indicates that most prefer faxes, calls and letters instead of e-mail—a message to the wise! However, for the 1999 session, we will be able to hear floor proceedings and committee meetings through our computer speakers. The Texas Legislature Online (www.capitol.state.tx.us) provides links to the House of Representatives (www.house.state.tx.us) and to the Senate (www.senate.state.us).

(see MCLENDON, page 31)

Depth and Complexity at the Secondary Level

Evelyn L. Hiatt

In the last issue of *Tempo*, a brief review was offered of the curriculum standard included in the Texas State Plan for the Education of Gifted Students. That standard reads, "Curriculum and instruction meet the needs of gifted students by modifying the depth, complexity, and pacing of the general school program." In keeping with the theme of this month's journal, the focus will be on adding depth and complexity to middle and high school services for advanced and gifted learners.

First, though, a word about pacing. Texas is one of the few states that has an extensive law relating to grade and course acceleration. Students may receive credit by examination for most middle and high school courses. This, however, should not be viewed as an alternative to the development of programs and services specifically designed to meet the needs of gifted learners. All credit by examination does is provide an efficient way for students to receive credit for material they have already mastered. In a sense, it is an excellent example of "curriculum compacting," which has long been advocated by various leaders in the field, most notably Joseph Renzulli. Pacing for gifted students, though typically related to compacting, or speeding up the curriculum, may also mean slowing it down. Think of the deep interest that some students have in a specific area or field. A gifted student may want to spend a semester analyzing one piece of literature or studying one historical event or working on one scientific hypothesis. In these cases, compacting or acceleration may buy time for a student so that he or she can dig deeper into an area of interest.

> "Classes should be participatory in nature, with students talking about and using the knowledge they are gaining to achieve greater understanding of the disciplines."

Which brings us to the issue of depth. As a quick review of last month's article, adding depth to the curriculum enables students to go beyond the basics of the disciplines and to study the details of the discipline, its patterns, trends, and rules. On an even more sophisticated level, students ponder the ethical issues or the unanswered questions of the disciplines. Complexity is added to a course or discipline by focusing on the relationship between various disciplines, analyzing how disciplines have changed over time, and examining various issues and topics from a variety of perspectives.

The addition of both depth and complexity suggest that acceleration alone was never intended to adequately meet the needs of gifted students. At the middle school level, "vertical teaming," usually leading toward Advanced Placement or International Baccalaureate examinations in the eleventh and twelfth grades, is one way to enhance the curricular program for all adolescents. What vertical teaming does is assure that students are familiar with the vocabulary of a discipline, the skills that professionals use in the discipline, and the research and study skills that enable them to investigate information independently. Again, pre-AP or the IB Middle Years Program are not options specifically for gifted students, although they are a step in that direction. By skillful grouping of students into areas of strength and encouraging students to be motivated learners, both of these vertical team options can be powerful components of a middle years gifted program.

Providing instruction at this high level requires that a teacher be a real master of his or her discipline. However, discipline expertise is only one aspect of teaching toward depth and complexity. Many teachers will wish to modify the instructional strategies that are used to assure that students are full participants in a rich curricular experience. Probably the best example of this is the Advanced Placement or International Baccalaureate programs.

Both AP and IB offer curriculum that is very rich.

(see HIATT, page 25)

Whiz Kids: *The Texas Academy of Mathematics and Science*

Nancy Kolsti

Rakesh Patel shied away from science as a kid. He admits he used to laugh at his high school friends' ambitions when they said they wanted to go to medical school and become doctors.

But now that he's known as Dr. Patel, he isn't laughing anymore. At 24, he has already earned his medical degree and is in his first year of a five-year residency at a Florida hospital.

What changed his mind about medical school? The Texas Academy of Mathematics and Science (TAMS).

PILOT PROGRAM

This University of North Texas program, the first of its kind in the nation, began 10 years ago as an experiment aimed at helping Texas' brightest teenagers get a head start on careers as physicians, engineers, and science researchers.

In 1986, James Miller, then dean of UNT's College of Education, envisioned a specialized math and science program for high school students at UNT.

Students enter TAMS as high school juniors. They live in a campus residence hall and take regular UNT courses. They work in university research laboratories alongside faculty mentors. After two years, each TAMS student has earned approximately 60 hours of college credit and a high school diploma.

As an academy student, Patel, of Houston, worked in a molecular biology lab at UNT, then spent a summer in a TAMS internship at the University of Texas Health Science Center in Houston.

"After that summer, I got the bug for premed," he explains. "I really made my career choice thanks to TAMS. One thing that has helped me has been that I was able to do research so early."

SPRINGBOARD TO THE TOP

Patel is one of more than 1,100 TAMS alumni. Many finish their bachelor's degrees at the Massachusetts Institute of Technology, Harvard, Stanford, and UNT. Many also complete advanced degrees. And as the alumni have matured, so has TAMS.

"It's not an experiment anymore — it's a proven entity," says its dean, Richard Sinclair. E. L. "Buddy" Langley, chair of the academy's advisory board, former president of GTE Southwest and former UNT regent, agrees: "Today, Texas business leaders see TAMS as a success story."

In 1988, Langley and prominent Dallas businessman Trammell Crow organized a fund-raising campaign to support TAMS for its first year. The campaign raised half a million dollars. Substantial contributions came from E-Systems, Electronic Data Systems, the Sid Richardson Foundation, Southland Corp., and Texas Instruments, among other companies. Their support sent a clear message to state leaders.

Thanks to Langley's work with key legislators, the Texas Legislature funded TAMS for its second year — and every year since.

After 10 years, the success of TAMS alumni proves the investment is paying off. Here are a few examples:

JAMES HAZZARD ('90)

James Hazzard's first research experience — a summer in the laboratory of James Kennedy, UNT associate professor of biology— was anything but glamorous. Then 18, he counted insects taken from lakes and ponds to determine the effects of pesticides on aquatic life.

"Handling the bugs was pretty disgusting," he remembers.

But it marked the beginning of a promising career in scientific research. Today, this TAMS graduate, now 25, is a few months away from receiving his doctoral degree in molecular biophysics from the University of Texas Southwestern Medical Center in Dallas.

In his last eight years, Hazzard, of Lewisville, has studied everything from e.coli bacteria to how nerve cells work. Entering TAMS helped him reach his potential.

"I had a lot of friends in high school, but academically I was bored — everything was too easy for me," he says. But TAMS changed that.

After he graduated from TAMS, he earned a bachelor's degree in molecular biology at the University of Texas at Dallas. Married and the father of a toddler, Hazzard now looks forward to a research position either at a university or in industry.

He credits TAMS with opening up his world: "It helped me think independently in science and in other fields, and you must do that to be a good researcher."

KELLY IVORS ('90)

While in her early 20's, Kelly Ivors was one of the youngest researchers with the U. S. Department of Agriculture.

Working on the USDA's Horticultural Crops Research

Lab in Corvallis, Oregon, for the previous three years, she studied organic — non-chemical — methods for dealing with soilborne plant diseases that affect fruit and nut crops.

She recently worked on ways to control a fungus that devastated one of Oregon's main exports, hazelnuts.

This fall, she starts a research assistantship at Pennsylvania State University, where she plans to earn a doctorate in plant pathology.

Ivors, now 25, says she's always been glad she became a member of the charter class of TAMS 10 years ago: "It developed my interest in science. I've always liked science, but if I hadn't entered TAMS, I probably wouldn't be a researcher."

Her laboratory experience at TAMS led to a rare undergraduate research assistantship at Texas A&M University, where she earned a bachelor's degree in bio-environmental science. By 1995, at age 22, she had already completed her master's degree in plant pathology at A&M.

She says even the ease of moving from Flower Mound to Oregon and then to Pennsylvania reflects her TAMS experience: "Being away from home at such a young age made me independent, and motivated me to try new things."

TAMS in 1998

- The class of 1998 included 64 National Merit Scholarship finalists and 28 graduates with perfect 4.0 GPAs.
- Two graduates were named semifinalists in this year's prestigious Westinghouse Science Talent Search; one finished among the top 10 finalists nationally.
- This year TAMS had more students - 11 - accepted to Stanford than any high school in the nation.
- Three graduates received Barry M. Goldwater Scholarships, considered the most prestigious national scholarship for students planning careers in math, science, or engineering.
- Scholarships have been set up by Chancellor Alfred F. and Mrs. Joanna Hurley, TAMS Advisory Board Chair E. L. "Buddy" Langley, and UNT Distinguished Alumnus Ken Newman ('66) to support academy students who choose to finish degrees at UNT.

ALBERTO SANTOS III ('92)

As a child in The Woodlands, Alberto Santos III collected insects for fun. As a graduate student, he turned to mice, setting out cages in Texas' Colorado State Park. But this was serious business.

Santos was seeking more knowledge about the parasites of *Peromyscus pectoralis*, a mouse suspected of carrying a respiratory virus known as a hantavirus, deadly to humans.

Today Santos, 24, is beginning his second year at the UNT Health Science Center at Fort Worth. After graduation, he's planning to do research and to practice and teach medicine at a teaching hospital — lofty goals for someone who as a teenager was uncertain about his future.

"In high school, I was among the brightest, but I never thought I fit in," he says. "At TAMS, everyone focused on learning."

His experiences there served him well. While finishing his bachelor's degree in biology at Trinity University in San Antonio, he met a professor who was studying the life cycle of a parasite that threatened an endangered fish species.

"When he saw I already had lab experience, he took me on," Santos says.

After graduating in 1994, he spent a year volunteering in the emergency room at San Antonio's Santa Rosa Hospital. In 1997 he earned a master's degree in biology from southwest Texas State University. Now he's committed to finishing medical school.

"The first two years are very book-oriented, but I've already seen, through my Santa Rosa Hospital experience, the end product of my goal, treating patients," he says. "That keeps me focused."

CARRIE IVES ('93)

Carrie Ives research may result in faster connections between computers and telephones. Ives, 23, is a mechanical engineer in research and development for Alcatel Network Systems, Inc. of Richardson. She's part of a team working to put a greater number of phone calls on a single fiber-optic cable. She landed the job in part because of TAMS.

The college credit she'd earned at the academy enabled her to alternate classes and cooperative education work for Alcatel while earning her bachelor's degree in

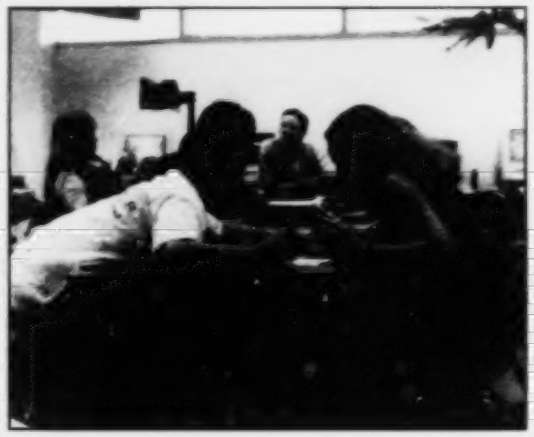
(see KOLSTI, page 8)

Creating Nations, Learning Diplomacy

Todd Martin

In a calm, calculated voice, the political leader of the nation of Luna Isle declared war against their rival, Orion. Equally calm and cool, the leader of Orion met with its closest ally and launched a counter attack.

The warring delegations were composed of high school freshmen seated adjacent to each other in a classroom at the Killeen Ninth-Grade Center. Their two teachers, standing at the front of the class, were not at all concerned about the violence. They supported it, even participated in it.



Welcome to the polite brutality of modern warfare. Welcome to the conclusion of the Create-A-Nation project of the Killeen Ninth-Grade Center (KNGC) Talented and Gifted humanities course.

It was about six weeks prior to the culminating war that the school's four humanities classes divided into groups of four or five to build their own countries. The group named their country, created a flag, composed an anthem, and engineered every facet of its culture, geography, and history.

It's been eight years since humanities teacher Elizabeth Cook first designed the project. She ran across a similar one-day activity described at a TAG conference, then built on the concept.

Cook said parents of some of her former students have contacted major universities and discovered admissions officials are more impressed with high school students who make a B or C in an active, integrated, cooperative learning program (such as Create-A-Nation), than those who make A's in traditional settings.

Now, she teaches the course with partner Barbara Finck. The pair explained how students use history, language, writing, and math skills in the culminating Create-A-Nation war. Teachers Robin Champagne and David Westfall facilitate the project in two additional TAG humanities classes at the same school.

"Kids like it," Cook said. "They have so much fun, they don't realize they're learning."

During the last week of the project, the groups have a food day in which each nation prepares and distributes a food item in class and explains how it became a part of the national fare.

One student who brought a gelatin dish with fruit and pretzels was concerned because the gelatin wasn't perfectly firm. "I told them that what matters is how it fits into their country," Cook said. In this case, the created nation was an island country in which early settlers couldn't find food, so they started eating seaweed from the ocean, represented by the gelatin. The fruit and pretzels represented various sea life, all important segments of the national culture. That, of course, is the sort of creativity Cook and Finck encouraged.

On another day, the students learned authentic history and culture in a creative way when they tie-dyed T-shirts. For a daily grade, each student prepared a written summary and described a significant event from the 1960s.

During the six-week Create-A-Nation project, students built papier-mâché models, drew maps, composed dramas, dances, songs, and nursery rhymes.

The students also prepared written proposals showing what they intended to do. That required creative thought and challenged time management skills, Cook said.

"We try to tie in their make-believe world with the real world," the teacher said. "Not all of them get it, but many do. My son did it eight years ago, and he remembers Create-A-Nation, the flags they made, and the kids who were in his group."

Standing on the baseball field in front of a backstop where a rainbow of streaked pink, purple, and blue T-shirts hang, freshman Brandi Humphries explained what she liked about Create-A-Nation.

"It was a good experience," the student said. "It's not just reports. We used our own ideas. It was one of the first projects I had fun on. "We didn't have just one assignment," Brandi explained. "We made up our own

project." She designed a travel poster, came up with a national animal, prepared a cookbook, and helped create the history and culture of her group's mythical country.

Designing a nation is a major undertaking, and students aren't always excited about diving into the ambitious project.

"At first, they have to think about everything," Cook said. "By the end, they just do it. At the beginning, they're frightened; some want out. It's probably the first time many of them have a major challenge where they have to manage time. They can't just study 10 minutes and make 100 on a test."

During the culminating war, "diplomats" from each country move from ally to ally borrowing "points" earned throughout the six-week project. The points, which could be compared to real-life money or troop strength or weaponry, shift from country to country based on deals clinched between the diplomats.

Throughout the war, allegiances tumble and betrayals become common as one country grabs the most points and seizes control of the game.

At the end, students talked about the power of defeating other groups, acquiring more points, and ultimately attacking countries just because they knew they could win.

They also described the dark realities of world affairs. Students characterized peace accords as flimsy agreements worth little more than the paper and ink that compose the documents.

"It was exciting," said KNGC student Amanda Pair, who played the role of diplomat for Luna Isle. Her country struck first and accumulated the most points in the war game.

"It was nerve-racking because I didn't know if I could get enough points. I didn't want to let down the others, my country and our allies," she said.

"It's hard to do," Amanda said of playing the role of diplomat. "You have to talk through your alliances, and sometimes you get betrayed."

Five months after completing the project, students Jaime Maness and Richard Lee reflected on the leadership and teamwork skills they learned.

"We had to learn to work together," Jaime said. "Even if you weren't comfortable with who you were working with, everyone had to be a leader in some way. It was the combination of talents that made it work."

Jaime said she learned that diplomacy requires discretion in determining who to trust. During the culminating war, she recalled people from other countries claiming treaties that didn't exist. "It takes a lot of brainpower," she said.

The Create-A-Nation project required students to discipline themselves, "to not go overboard" in creating the best possible nation, thus neglecting the need to put together strategy to survive attack, Richard said.

"Time management was a big part of it," Jaime said. "You had to put together proposals, turn them in to teachers, find out how many points you could get, and earn the points." Each team, or nation, conducted several activities simultaneously, she said.

Richard said he appreciated the efforts of his teachers, and he liked the integration of history and English. The project spread across the whole school year, allowing students to earn one history and one English credit.

Both students enjoyed the opportunity to create. "When I was little, I loved to pretend," Jaime said. "In this project, you got to create. Everyone intertwined different cultures. It made you realize how different cultures and ideas affect a nation."

Todd Martin is communications assistant in the Killeen Independent School District. Prior to that, he spent six years as a newspaper reporter for the Killeen Daily Herald *and* San Angelo Standard-Times, *covering public education about half that time.*

(from KOLSTI, page 6)

mechanical engineering at Texas A&M. By the time she graduated in 1996, she had impressed Alcatel's managers so much they gave her a permanent position

As a child in Jefferson, Ives was always interested in mechanical things. But her small-town high school didn't challenge her.

"I was taking all honors classes, but I didn't spend very much time studying. I still had lots of free time," she says. Ives credits TAMS with helping her work as part of a team as well as making her study harder.

"At TAMS, I not only received a great background in math and science, but I learned to be a bit more open-minded," she says.

"I was definitely exposed to a lot of diversity and people with backgrounds different from mine. That has served me well."

(Reprinted from The North Texan, *Fall 1998)*

Advanced Placement: *Academic Rigor and University Credit*

(Editor's Note: Information in this article was provided by the Advanced Placemen Southwest Regional Office in Austin, TX.)

The College Board's Advanced Placement (AP) Program (begun in 1955) is an opportunity for students to pursue college-level studies while still in secondary school and to receive advanced placement, credit, or both, in college. By challenging and stimulating students, the AP Program provides access to high quality education, accelerates learning, rewards achievement, and enhances both high school and college programs.

Students demonstrate scholarship on national and international academic levels. Taking an AP Examination enables students to compare their knowledge and understanding of a college-level subject with the high academic standards established by college faculty. The challenge of meeting these national and international standards gives students a tremendous sense of accomplishment. Students who plan to attend a university outside the United States may also be eligible to receive the Advanced Placement International Diploma for Overseas Study, which is recognized by universities throughout the world.

Students who take AP courses learn a subject in depth, develop analytical reasoning skills, and form disciplined study habits that can contribute to continued success at the college level.

College admissions personnel view AP experience as one indicator of future success at the college level. Successful performance in an AP course is, therefore, a great advantage to a student who wishes to attend a highly selective college.

Students are often exempted from introductory courses at college. Course exemption gives students time to broaden their college experience by exploring additional subject areas, participating in internships, and studying abroad. Students who earn satisfactory grades on enough AP Exams may be granted a full year's credit by their college or university. In 1997, more than 30,000 students were eligible for sophomore standing at approximately 1,400 colleges. The AP Program also offers several prestigious awards to recognize high school students who demonstrate college-level achievement on specified numbers of AP Exams.

The AP Effect

Students who complete AP courses are:

- better prepared academically;
- more likely to choose challenging majors;
- likely to complete more college work in four years;
- likely to perform significantly better than students who did not take AP courses;
- more likely to exercise leadership;
- more likely to graduate with a double major;
- twice as likely to go into advanced study.

Willingham & Morris, 1986; University of Texas Study, 1988.

Teachers of AP Programs attend AP-sponsored workshops. Graduate courses and extended workshops are offered at various universities and professional development institutes.

The National Education Goals Panel uses AP as a measure of academic excellence. School with successful AP programs are regarded as strong academic institutions, and their participation helps set a standard of achievement for students and contributes to the faculty's professional pride.

The AP Program is open to any secondary school willing to organize one or more courses, foster teacher development, and administer the AP Exams. About 50 percent of the nation's 21,275 high schools offer college-level AP course work. The number of AP courses varies from school to school, with an average of more than five per school. In 1997, more than 565,000 students representing more than 11,500 secondary schools took over 900,000 examinations and had their results sent to nearly 3,000 colleges.

THE AP EXAM

The exams, prepared by College Board Development Committees made up of college and university faculty and seasoned AP teachers, are administered by individual campuses for a fee. Many states and school districts financially support the testing program.

AP Courses and Exams

ART
History of Art; Studio Art (General)
Studio Art (Drawing)

BIOLOGY
General Biology

CALCULUS
Calculus AB; Calculus BC

CHEMISTRY
General Chemistry

COMPUTER SCIENCE
Computer Science A; Computer AB

ECONOMICS
Macroeconomics; Microeconomics

ENGLISH
English Language and Composition
English Literature and Composition

ENVIRONMENTAL SCIENCE

FRENCH
French Language; French Literature

GERMAN LANGUAGE

GOVERNMENT AND POLITICS
Comparative Government & Politics
United States Government & Politics

HISTORY
European History; United States History

INTERNATIONAL ENGLISH LANGUAGE (APIEL)

LATIN
Vergil; Latin Literature

MUSIC THEORY

PHYSICS
Physics B
Physics C: Mechanics
Physics C: Electricity & Magnetism

PSYCHOLOGY
Introductory Psychology

SPANISH
Spanish Language; Spanish Literature

AP Exams (except Studio Art) contain both multiple-choice questions and free-response questions, which require essay writing, problem solving, and other skills. In Studio Art, students submit portfolios of their work instead of taking an exam. The multiple choice section of the exam is scored by computer. The free-response booklets are evaluated by faculty consultants (selected college professors and AP teachers) who spend a week each June scoring answers.

The AP grading system uses a 5-point scale:

5 - Extremely well qualified
4 - Well qualified
3 - Qualified
2 - Possibly qualified
1 - No recommendation

Comparability studies conducted by the AP Program indicate that an AP grade of 3 is approximately equal to a college course grade of B at many institutions. At some other institutions, an AP grade of 3 is more comparable to a college course grade of C. Each college decides which AP Exam grades it will accept for credit or advanced placement or both; most accept grades of 3 and above. The procedures and standards for setting AP grades are maintained from year to year so that the value of AP grades is consistent.

AP grade reports are sent in July to each student's home, high school, and any college(s) designated by the student. At the time of the exam, students can indicate on their answer sheet if they would like a college to receive their grade. After the exam, they can write to the AP Program and request that the grade be sent to other colleges as well. Students may also cancel or withhold a grade by contracting the AP Program by June 15 of the testing year.

THE AP TEACHER

The qualifications for teachers of AP classes can be summed up with the phrase "willing and able." Most teachers are more than wiling; they are eager to take a class of capable students who are committed to working hard in a course. A teacher's ability to teach AP is usually

(see AP, page 30)

Gifted & Talented Seminars:
Enrichment, Extensions, and Networking

Cynthia Specia Shade

"There are never enough hours in the day to provide specialized curriculum to my gifted students!" Have you ever felt this way? Do you find yourself bubbling over with ideas to enhance and enrich students' learning only to shelve your ideas due to lack of time? Does the bell ring too soon? Have your students expressed frustration at having their trains of thought interrupted before they are satisfied about a subject? One solution to these complaints is to use seminars that provide extension, enrichment, and networking. These seminars may be undertaken on a district-wide basis.

Eight years ago Edgewood gifted and talented program began seminars for identified gifted students as a way of providing enrichment experiences. In 1990-1991 Edgewood had less than 1% of its population identified, and gifted students needed a support system beyond the classroom. Few teachers understood the characteristics of gifted students. The seminars were designed as a means of support for the Edgewood ISD gifted cohort as well as a way to introduce the students to a wide variety of concepts and topics. Seminars nurture students' intellects as well as their social and emotional needs. In 1990, identified students had G/T curriculum; however, it became apparent that these bright students needed broader advanced curriculum experiences.

> "Seminars nurture students' intellect as well as their social and emotional needs."

Most of the families within the district (93.3%) qualify for federally established criteria for low income families. Because of socioeconomic limitations, parents experience greater difficulty in providing enriching experiences for a gifted child than parents in more affluent or suburban areas. Thus it became an imperative that the school district provide challenging and enriching educational experiences for these students.

Since 1991 subject specific academic seminars have provided learning experiences and extensions that nurture the gifted student cohort. Enrichment seminars introduce concepts ordinarily not included in the regular curriculum. Seminar programs builds cross-district bonding in grades 4-12 and are designed to establish a network of gifted students who are able to support each other as they engage in academic inquiries and career investigations. All seminars, which typically start at 9:00 a.m. and conclude at 3:00 p.m., are direct extensions of the gifted curriculum themes: Heroism, Survival, Conflict, Influences, Freedom, Cultures, Change, Explorations, and Origins. Four to seven seminars are held each year.

Seminars focused on multiple topics include: philosophy, poetry appreciation, Hispanic culture, freedom, folk art, history, leadership, poetry writing, art infusion, composers and their music, world cultures, Block Kids Building Program, Texas history, and inventions.

- *Three Philosophers*, the first Gifted and Talented High School Seminar was held on December 11, 1991, provided high school gifted students an opportunity to experience a university professor's lecture, obtain an introduction to philosophy, and meet other gifted students from across the district. The program allowed students to learn in a differentiated manner and to internalize the ideas presented by Professor Stephen Calogero of St. Mary's University, whose philosophy lecture introduced future college curricula.

Through their verbal and non-verbal presentations, gifted students internalized the ideas of Rousseau, Plato, and Hobbes, and verified their understanding of these philosophies. Presentations were judged by teachers, and certificates were given to the winners. Finally, written products were developed into a monograph for participants and parents.

- The second seminar, held on December 12, 1991,

was for middle school and junior high gifted students. Pupils participated in a unique seminar focusing on the poetry of Robert Frost. In this seminar students obtained an introduction to Frost's poetry, experienced a poetic dramatic presentation, and met other gifted district students. "Sounds of Frost," arranged by the author and directed by Bruce Limpus, was performed by Edgewood High School's gifted language arts students.

After the presentation, students divided into groups to work on a multi-tasked project. This challenging project included an oral presentation, a visual representation of one poem (found art), an original poem, and a non-verbal representation of one poem. Using poetry as the nucleus, students developed art representations of poems studied and also wrote original poems. The work was judged by district language arts teachers and groups were awarded ribbons.

• The next secondary gifted seminar, held on May 4 and 5, 1992 was *Celebrated Hispanic Culture*. Since 98% of Edgewood students are Hispanic, the presentations focused on Hispanic fine arts. The internationally renowned artist, Diana Cardenas, presented a slide show history of the art and architecture of Mexico; *conjunto* musical star Santiago Jimenez explained the history of *conjunto* music and demonstrated techniques; renowned poet Jesse Cardona led students through a poetry experience "La Tortilla;" and the Ballet Folklorico Company of San Antonio gave a demonstration which included historical perspective on various dances and costumes.

• In the interactive *Foundations of Freedom* seminar of January 21, 1993, groups of students rotated through five stations, each of which provided materials and/or research tools to complete a group product. At the first station, students used Archiblocks and scraps of wood to construct a structure that reflected freedom. To enable students to conduct research, a second station provided the *New Grolier's Multimedia Encyclopedia* CD-ROM on a Macintosh computer. Students compared and contrasted freedom in democracy and anarchy. A third station challenged students to select a pictorial concept and then create a verbal expression (i.e., rap, poem, essay) reflecting how freedom is depicted. The fourth station required an original kinesthetic medium (dance, mime, human sculpture, etc.) reflecting the freedom in a musical selection. The fifth station required students to use recyclable materials to create an original product reflecting the theme, a foundation of freedom. For the finale, student groups explained their creations. Teachers of the gifted judged products and awards were presented.

• On April 21 and 22, 1993, G/T students visited the San Antonio Museum of Art and a special exhibit, *Visiones Del Pueblo*, part of a national tour organized by the Museum of American Folk Art. This seminar culminated a year of studying great artists in the "Master a Month" series in which students identified paintings, style, artists, and techniques. Each month they also painted a picture that depicted the style of the artist.

• In *Conflict in History*, gifted students traveled to Fredericksburg, Texas, where they visited the Admiral Nimitz Museum and LBJ Park on April 6 and 8, 1994. Students viewed objects and artifacts related to World War II in the Pacific as well as Fleet Admiral Chester Nimitz's service as Commander-in-Chief of the Pacific campaign.

• *R.O.P.E.S.*, a leadership and team building training, was the curriculum of another secondary seminar in the spring of 1994 at Olmos Park and conducted by Jim Keedy over five days. Teachers and parentes acted as chaperones. Students participated in team building activities; this challenge course is designed to develop students' self-confidence, communication, decision-making, and leadership skills; other skills included trust, group cohesion, an awareness of group process, improved physical fitness, and, of course, fun.

• On December 12 and 14, 1994, Naomi Shihab Nye, internationally acclaimed poet and songwriter, conducted two *Poetry Now!* seminars. This poet,who has written several collections of poems, has also worked in schools for over 20 years, conducting writing workshops for teachers and students. Nye has won numerous awards, and her December seminar inspired the creation of a book of original student poems. Published by the district, a copy of the book was given to each seminar student.

• On April 13, 1995, gifted high school students participated in a multi-media artistic experience. Violinist Jack Glatzer presented a musical concert-lecture seminar on the *24 Caprices of Paganini*. Students were treated to a concert of extraordinary techniques that mimic Paganini's style. Glatzer, an award winning world-class violinist, demonstrated his wealth of knowledge by showing slides, presenting historical data, and playing scores developed by Paganini.

• On March 14, 1996, Lackland's Defense Language Institute English Center allowed 17 foreign exchange student from 11 countries to speak with Edgewood's secondary G/T students about cultures of their countries for a World Culture Seminar. The Language School is for teachers who teach English in their own country. The English teachers spend seven months at Lackland Air Force Base to study the finer points of English and to learn the customs of America. After seven months, these professors and military officers return to their own country. G/T students met with the language students to interact with language school ambassadors. Student and Language School groups enjoyed interaction and exchange of ideas.

• February 21,1996, G/T fourth graders had a seminar on architecture which has been repeated annually. The

14 (see SHADE, page 31)

SAEGAR Workshop: *Advanced Language Arts & Reading for Junior High*

Gayle Roome & Donna Cole

—"May I have a summer reading list for my daughter to prepare her for SAEGAR?"

—"Here is an example of my writing. Will you consider me for SAEGAR?"

—"I would love to be in SAEGAR. What must I do to qualify?"

These are examples of questions parents and students ask as they inquire about the advanced reading and language arts program at the junior high level. The Sixth, Seventh, and Eighth Grade Advanced Reading (SAEGAR) program's mission is to prepare students thoroughly for pre-AP and Advanced Placement classes in high school. Teachers assigned to teach advanced classes attend Advanced Placement workshops for training to equip them to challenge junior high and high school students. The junior high school program (SAEGAR) was developed locally to service gifted and talented students at Industrial Junior High School, Lolita, Texas. Students are challenged through literature choices, writing assignments, and speaking opportunities. Vocabulary strengthening is used in daily teaching strategies (Atwell, 1987).

In addition to the grade-level reading lists, other books are suggested and are optional for students who want to read more. The lists are designed for students to experience reading choices that provide different writing styles. History, social issues, science, biography, and variety in fiction provide extensive thinking and writing opportunities.

Students produce visuals to aid in presenting material to a variety of audiences. Eighth graders create big books, bulletin boards, puppet shows, dioramas, maps, and timelines and practice presentation skills to deliver mythological stories to elementary students. Both seventh and eighth graders prepare visual aids and present their research topics to peers, teachers, parents, and even school boards. Sixth graders write narratives and teach "how-to" complete tasks in proper sequence. Sixth graders also write screenplays based on scenes from Mark Twain's *The Adventures of Tom Sawyer.* Students benefit because they use creative skills in preparing and producing skits and speeches. They are challenged by assignments that present problems to solve as they develop text and visual representations to communicate their ideas.

Writing assignments include all the TAAS writing formats plus language analysis, poetry explication, and literary analysis of passages, articles, books, and films. Grammar lessons focus on syntax, vocabulary strengthening, phrases and clauses, gerunds, infinitives, and participles. Observed student mistakes are addressed during and as follow-up lessons in the writing process for fewer future errors. Students benefit greatly as they recognize their personal errors and receive immediate feedback for correction.

SAEGAR Reading Lists

- Grade Six

The Adventures of Tom Sawyer (Twain, 1876)
The View from Saturday (Konigsburg, 1996)
Walk Two Moons (Creech, 1994)
A Paradise Called Texas (Shefelman, 1983)
Julie of the Wolves (George, 1987)
A Wrinkle in Time (L'Engle, 1962)
The Bronze Bow (Speare, 1989)

- Grade Seven

All Creatures Great and Small (Herriot, 1972)
Summer of My German Soldier (Greene,1973)
The Hiding Place (tenBoom, 1971)
Lobos, Longhorns, and Mules (Clendenin, 1997)
Congo (Crichton, 1980)
A Separate Peace (Knowles, 1959)

- Grade Eight

Mythology (Hamilton, 1940)
A Connecticut Yankee in King Arthur's Court (Twain, 1889)
Rebecca (duMaurier, 1938)
A Tree Grows in Brooklyn (Smith, 1943)
Johnny Tremain (Forbes, 1943)
Tales of Old Time Texas (Dobie, 1955)

BEST COPY AVAILABLE

New writing opportunities are offered often so students can practice and improve their writing skills. Students write every day and are encouraged to develop their own writing voices rather than follow a pattern (Rief, 1992). Eighth grade students are required to seek publication of an original short story to discover and identify challenges faced by published authors and learn strategies to compose various types of text.

The seventh and eighth graders complete a research project during one six week period. Interdisciplinary work with computer and history classes is used in conjunction with research assignments. Modern Language Association of America's *MLA Handbook for Writers of Research Papers* (Gibaldi, 1995) is the format used by junior high students. Students receive grading expectations when projects are assigned. Students are required to relate their chosen topics to issues they want to explore and debate. Therefore, they gain in-depth learning from a self-selected topic (Kaplan, 1979).

Poetry is read, analyzed, explicated, written, and shared in oral reading sessions. Three to five days every six weeks are set aside for poetry enjoyment. Activities include writing with tone words, brainstorming titles, finding poetry from non-poetic sources, creating collages from existing poems in which words have been cut apart, and writing group poems as students inspire each other. The school term ends with students participating in a poetry workshop (Frazier, Wellen, 1998). Students are presented an opportunity to submit an original poem for publication in a student volume; identified gifted students who like poetry often accept this challenge. Three students have had their work published.

Language analysis is introduced as students evaluate the mood or tone set by specific words in a passage. Children's literature or picture books are used as lesson examples. To provide guided practice, the whole class analyzes passages from the current novel. Through these class exercises, students have the opportunity to learn to observe the beauty, meaning, and effectiveness of diction and syntax as they practice language analysis.

Vocabulary building happens in reading, writing spelling, and defining. The easy method is defining the word. Word lists may be given, words defined, and student memorization assessed, but only when words are used in writing and speaking are they truly owned. The use of numerous strategies strengthens student understanding of diction and the semantics produced by the chosen words. Students' word choices increase because they read, hear, and write more words daily.

Students learn literary analysis by observing language, characters, events, plots, settings, and issues from several points of view. Books offering differing points of view are the first step in learning to critique. *The True Story of the Three Little Pigs* (Scieszka, 1989) and *The Pain and the Great One* (Blume, 1974) are two good examples. Reading letters to the editor and editorial columns in newspapers and magazines are good sources for material showing various points of view. Evaluating the language used and determining the validity of the argument train students to recognize, model, and practice language effectiveness. For assessment, students have the opportunity to critique essays, passages, and films. Their grade is based on the language they use effectively in presenting their point of view on an issue.

Critiquing, or literary analysis, is a form of rhetoric. Other forms of rhetoric used in the course are persuasive writing and speaking. Junior high students are fascinated by the idea of debate, but they need guidance in focusing on persuasive strategies and polishing them in written and verbal forms. Expository writing based on informing and narrating has been the greater focus in the usual language arts classroom. Writing with a more forceful voice, stating reasons, supporting the statements, and actually being persuasive enough to change a person's mind is the goal for teaching students rhetorical skills. They become better communicators by finding their own voice through critical thinking and having the ability to state their opinions clearly.

"The SAEGAR program has experienced some success because students are increasingly more receptive to challenging assignments," states the high school freshman English teacher. She also observed, "Advanced placement test scores have improved. The longitudinal results of the early SAEGAR differentiated classes and pre-AP classes show improvement from no scores of three or four on the essay writing to one-half of the students scoring fours."

Developing and strengthening the curriculum each year by adding novels and skills and raising expectations prepares students to think critically. The junior high course has grown from a two-year program to include three grades. The curriculum is differentiated for the gifted and talented and for students who are willing and able to take on the challenging skills and assignments. Students are not only learning content, but they are gaining lifetime skills for effective communication.

Sharing problems and successes between elementary, junior high, and high school faculty members has created a program that helps students develop functional lifetime skills. SAEGAR was created through this type of cooperation because the need became evident for successfully educating students on the junior high level for greater achievement in high school. It is a plan for creating a student's intrinsic desire for high standards and lifelong learning.

Academically gifted students' needs are met as classes proceed through the course syllabus outlined and presented at the beginning of each school term. Their writ-

(see ROOME & COLE, page 24)

The WAVE that's Changing the Tide: *An Intermediate Magnet Program*

Candace Silcott & Melinda Wycoff

"To me, WAVE is having fun while learning. It is learning with people who think like you do. Teachers understand you better. You don't have to spend time hearing what you already know."

How many students have such positive feelings about their middle school gifted program? Jim Delisle (1996) reminds us that being gifted is not considered an asset when many students experience the label in conjunction with negative names such as "geek, nerd, dork" or worse, often leading gifted students to deny or downplay their giftedness. This is especially the case at the intermediate school level where peer acceptance is so important to a student's self worth.

According to Tomlinson (1994) "gifted middle school learners are at special risk in the absence of appropriately challenging instruction." In the spring of 1995 this philosophy was embraced by a contingency of parents, teachers, and administrators, leading to the formation of a committee charged with a challenging goal. The committee was to design a program that would better meet the needs of a segment of the district's gifted population in order to attract students to a campus with a small, predominantly at-risk population.

> "Talented youth need the stimulation and challenge that can come with advanced and enriched instruction, highly knowledgeable teachers, and equally talented/precocious peers."
>
> *Nicholas Colangelo*

Due to the redrawing of attendance zones following the construction of a new intermediate campus, Webster Intermediate School, the oldest secondary building in the district, had a declining enrollment and a less than stellar reputation within the community. The committee met throughout the summer and the 1995-1996 school year to investigate magnet schools and G/T programs, and to develop a possible structure and tentative schedule for the program. In the meantime, the tightly knit faculty voted to move to teaming and to block scheduling in order to facilitate the linking of a G/T magnet program with the regular attendance zone program at the school. Dr. Joyce Juntune from Texas A&M University met with the committee and came weekly to instruct interested faculty members on the nature and needs of G/T students and in techniques that could be used to differentiate instruction to better meet their educational needs. In addition, Dr. Juntune was later contracted as a consultant to evaluate the first operational year of the program.

At the May 1996 meeting of the Clear Creek ISD board of trustees, the decision was made to fund the Webster Academy for Visions in Education (WAVE) at Webster Intermediate. Funding included the employment of a liaison to coordinate the program, four teachers in the core academic areas, and a technology teacher. In addition, funds were committed for a state of the art computer classroom with other equipment necessary for a strong technological capability for the program, training for the WAVE staff, the updating of the library for the entire campus, and continued professional development for all of Webster's staff.

By the end of June 1996, the first year's WAVE staff had been selected. Two teachers were chosen from existing WIS staff, one transferred from high school, and two had applied from outside of the district. The WAVE teachers met on several occasions to develop interdisciplinary curricula focused on major themes. In addition, the entire WIS staff (grouped by department and grade level teams) met for two days to discuss the necessary changes needed to accommodate block scheduling. In July, the WAVE staff and the new school administrators enrolled in the Texas A&M ICE Summer Workshop in Gifted and Talented Education, receiving four college credits toward their state G/T endorsements. Late in July, the WAVE team participated in a two week workshop hosted by NASA at Johnson Space Center for district intermediate teachers to improve their internet skills and to facilitate connections between the space agency and the school district.

On August 12, a Cougar Camp Orientation was held for all WIS students. This event was well attended by WAVE families because it was their first opportunity to

visit the school and to meet all the new players involved in the educational experiment called WAVE. School opened on August 14 for approximately seventy sixth grade students and thirty-two seventh grade students. The first challenge was to determine the buses to which the students had been assigned! (The district provides transportation for the magnet students from their attendance zone intermediate school.) In the afternoon, the students are bused back to the intermediate campuses, where they wait in a study hall setting until 4 PM and then ride their neighborhood buses home.

On "White Days" (see Figure 1, page 17) in the block scheduling rotation, all WAVE students check in with their study hall teachers for roll call and then move immediately to a two-hour class called WAVE mini-course. Students chose these classes during study hall a week or so before the beginning of the six weeks. Care is taken to keep the names of the instructors secret throughout the selection process. The program liaison sorts the sixth, seventh, and eighth grade students into their new classes, and creates new roll sheets on a database. On the day the new classes are to begin, the study hall teachers inform the students of their next mini-course assignment. Classes that are particularly popular are often repeated, if not during that year, perhaps the next. By the time the students leave for high school, each will have experienced eighteen mini-courses of their own choosing.

There will be over ninety mini-courses offered this year (see figure 2, page 18). The variety of in-depth or real-world experiences is limited only by the imaginations of the teachers, volunteers, and the students themselves, who often ask for classes in their areas of passion. Webster Intermediate teachers who are not a part of the WAVE Program sometimes volunteer to teach a six-week class in a personal area of interest. Parents and community professionals have paired with teachers or taught classes on their own on such topics as flight ground school, lunar rocks and meteorites, nutrition and medical science on the space station, Antarctica, and Odyssey of the Mind. Independent study is always an option, and the mentors for that individual work can range from a professional in the field to a teacher on staff such as the band director, the librarian, or a coach who also loves military history.

Although the mini-courses are the calling card of the program, WAVE has much more to offer its magnet students: differentiated, interdisciplinary, and teamed instruction in G/T sections of literature-based language arts, social studies, and science, with acceleration offered as needed in mathematics. Mathematics courses range from sixth grade regular math to pre-AP geometry. One student this year participates in dual enrollment in pre-AP Algebra II at one of the district's three traditional high schools. A matrix determines placement in math courses. State-mandated computer literacy credit is received by an integration of technology throughout all G/T coursework and mini-courses. A wide variety of electives are available to all WIS students. All students in the school are eligible to participate in extracurricular activities and athletics. An after-school fencing class taught by a WAVE parent volunteer and funded by the City of Webster is even available.

Sixth grade students receive a special rotation of classes designed to give them the tools they will need to continue in academic success as well as to enhance their lifelong abilities to learn and develop their self-esteem. The students rotate among these classes throughout the year during the first period class on "Maroon Days."

In its third year of implementation the WAVE full time teaching staff has grown to twelve, servicing approximately 103 sixth grade students, 100 seventh grade students, and seventy-seven eighth grade students. During the first year of WAVE, the WIS families voted to institute a standardized dress policy. Its success has inspired another district intermediate campus to institute standardized dress as well. Campus-wide successes include improved TAAS scores, lowered office referrals, and increased involvement in the campus's strong fine arts, athletic, and extracurricular programs.

A program such as this requires skills of problem solving, forward thinking, and risk taking and can only be accomplished under the leadership of committed campus level administrators. Offering rigorous content, flexibility, and highly trained teachers in an environment with strong administrative and community support, the Webster Academy for Visions in Education has exceeded its original goals and looks forward to a future of developing successful, motivated, and productive students.

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Candace Silcott serves as the liaison for the Webster Academy for Visions in Education at Webster Intermediate School in Clear Creek Independent School District. She was recently named Region IV GT Advocate of the Year by TAGT.

Melinda Wycoff is the Gifted and Talented Education Coordinator in Clear Creek Independent School District. She is currently a doctoral student at Texas A&M University.

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Figure 1

THE WAVE PROGRAM CURRICULUM EXPERIENCE

Block Scheduling

The students' schedule is spread over a two-day rotation. WAVE students' day begins with a zero period at 8:10 a.m. Students from the Webster Intermediate attendance zone begin their day at 9:00 a.m. with first or fifth period.

SIXTH GRADE WAVE

The schedule for WAVE sixth graders begins with WAVE block each day. During first period sixth graders are involved in a rotation of classes designed to provide them with a core of skills that will serve them throughout their academic lives.

Sixth Grade Wave Block

First Six Weeks Class Rotation	Second through Sixth Six Weeks Class Rotation
Self esteem and team building	Research
Learning styles and organization	Presentation
Goal setting	Creative-Productive Thinking
Leadership	Traits of Giftedness
Computer skill assessment	Social and Emotional Aspects of Giftedness

During zero and fifth periods sixth, seventh, and eighth graders are mixed for the Wave mini-courses. Schedules for seventh and eighth graders is the same except for an extra elective in place of the 6th Grade WAVE Block

Schedule for Sixth Grade WAVE

Maroon Days			White Days		
Time	Period	Description	Time	Period	Description
8:10	0	WAVE Study Hall	8:10	0	WAVE mini-course
9:00	1	6th Grade WAVE Block	9:00	5	WAVE mini-course
10:25	2	class	10:25	6	class
11:50	3	class	11:50	7	class
1:50	4	class	1:50	8	class

SEVENTH AND EIGHTH GRADE WAVE

Seventh and eighth grade students in the program have the opportunity to take a second elective. Foreign language classes for high school credit are offered as well as advanced computing and a variety of other elective choices.

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Figure 2

MINI-COURSES

WAVE Mini-courses and Independent Study

Each six weeks all WAVE students are presented with descriptions of mini-course offerings. They may choose among those or submit a proposal for independent study research and presentation. Students will be grouped according to three choices they have made. Students doing independent study are assigned to a teacher/mentor who can best guide them. Because of the importance of decision making and commitment to the development of character, students are encouraged to make independent choices and to complete the mini-course once it has begun. The following is a sample of mini-course offerings as presented to students.

Myth, Magic, and Majesty – Explore the mythical world of Merlin through the trilogies of Mary Stewart and T.A. Barron. Venture into the realm of King Arthur and the lore of Camelot. Answer T.A. Barrron's challenge to write a creative story or poem in response to one of his books and talk to him in person on Saturday, September 27!

The Art of Science – In this course we will examine how science has been portrayed by artists through the ages. We will view nature through the eyes of da Vinci, van Gogh, Picasso, O'Keefe, Tamayo, and Bean and examine the importance of their contributions. You will be allowed to express your own creativity in a variety of interpretive art projects. The only requirement for this course is a great imagination, not art talent!

Trial by Jury – Learn the steps of a jury trial and the jury selection process. Try an alleged criminal in a mock trial.

Earth-Kam – Interested in learning more about the Space Shuttle, world geography, earth science, and more? This six weeks we will take an in-depth look at mankind's impact on Earth. We will take digital images during the post Mir-undocking orbits of STS-89 to use in our research. Students participating in Earth-Kam will be required to work after school, weekends, and/or holidays as needed.

It's My Parent's Fault – This class will examine inheritance and genetics. Issues such as birth defects, cloning, genetic diseases, and genetic engineering will be studied. Methods of determining possible traits you have inherited and possible traits you could pass on will be taught.

Because It's There – Mt. Everest, our planet's highest mountain, is the focus of this course. Mt. Everest's mythical allure will be examined as we study the physical geology of this landform, as well as the attempts by man to "conquer it". The class will culminate with a SAXaphone teleconference in February. Come climb to fantastic heights of understanding!

So, You Want to be a Doctor? – Students will have the opportunity to examine a variety of medical fields that may interest them. Topics related to becoming a doctor will be covered, such as educational requirements, job opportunities, and medical ethics. Speakers representing various medical fields will share their knowledge and expertise about their vocation. Real world lab testing will provide students the opportunity to learn about medical technology and how to maintain their own medical charts. Parental consent is required for this course. Come see what the doctor ordered.

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Independent Boarding Schools: *An Educational Alternative*

Patsy Kumekawa

Independent residential secondary schools can be viable educational options, but they are by no means equal, especially with respect to genuinely gifted students. This point was brought home to me during a recent conversation I had with an acquaintance. As parents of children (mine a second grader, hers in college) identified as gifted, we were sharing ideas about educational approaches which both recognize and support those with notable intellectual potential. We began to discuss the relative merits of some well-known boarding schools in New England.

> "The bottom line is whether a school pays lip service to gifted students or whether the teachers and staff are sensitive to the complexities of giftedness and are genuinely committed to helping talented students fulfill their potential."

Some years ago, my acquaintance had explored independent schools for her son who was on his way to exhausting the math and science courses in the local high school. Under consideration at the time was a highly respected and nationally known boarding school. But when asked about her impressions of this school, the parent said, "They just didn't have the right answers."

"They just didn't have the right answers" captured for me the distinction between independent schools that compel closer examination and those that probably would fall short in meeting the needs of gifted students. What are these "right answers"? There are a lot of independent schools that possess impressive educational attributes (accelerated/AP courses, small classes, comprehensive art, athletic, and computer facilities, multicultural diverse student population, and so on). Indeed, many schools have the look and feel of small liberal arts colleges. But beyond academic rigor and extensive and well-maintained buildings and grounds, can or do these institutions truly serve those with academic and creative talent?

For starters, any boarding school that is worth serious consideration by parents of a gifted student must have a significant proportion of its student body made up of talented individuals. Being among kindred spirits is especially important at boarding schools as students are learning in and outside of the classroom with and from fellow students 24 hours a day.

One can get an idea of the relative capability of the student body through a review of average SAT and/or ACT scores and the listing of the colleges at which the majority of graduates of the school have matriculated over time. Combined SAT scores should average over 1200. This information may be derived either from school admission literature or via one of two leading guidebooks on independent schools found in most public libraries: *Peterson's Private Secondary Schools* and *The Handbook of Private Schools*. One can also inquire about a school's typical admission rate among its applicant pool. Unlike highly selective colleges, acceptance rates at independent residential schools, even at very competitive institutions, are relatively high. This is due to the fact that there are relatively few families who seek out the independent school option, and among those who do, the goal is to enroll their child at an institution which best fits their son's or daughter's academic abilities. Thus, a family with a son or daughter of average capability, for example, will tend not to look for placement at a highly competitive school. Selective schools generally dissuade candidates from applying if it is felt that a prospective student would not be able to handle the academic load. It is not unusual for some schools to have an acceptance rate of 90+%. Among more competitive institutions, a basic thumbnail figure for acceptance is 65%.

Another way to determine the intellectual caliber of a school's student population is to study the curriculum for range and depth and graduation requirements. Families should not only get a feel for the highest levels of math,

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science, and foreign language courses that are provided, but also the scope and complexity of the English and history courses and the extent to which writing and analysis are required. Essentially, the more advanced course offerings at a strong independent school should compare to a course of study for first and even second year college students.

Finally, the ability to support an extensive curriculum and to attract capable students normally requires substantial amounts of financial resources. In general, the strongest independent residential secondary schools tend to possess endowments that are comparable to highly selective small colleges. Not that the ability to generate sizable endowment income translates into keeping tuition costs down, but it does prevent the school from becoming too tuition dependent in meeting operating expenses. This, in turn, allows the school to have greater flexibility and freedom in course offerings, educational approach, admission standards, and faculty hiring. Moreover, a healthy endowment increases the amount of financial aid that can be awarded, thus helping a school to attract a diverse and talented student population. There are many solid schools that are able to operate on a shoestring, but one should view the endowment size as an informal check on the potential flexibility a school has in both sustaining its curriculum as well as supporting a capable student body. A good endowment figure to start at would be $60 million.

When described on paper (admission literature, educational guidebooks, or web sites), a school's facilities, curriculum, financial resources, and student body could suggest that the school caters satisfactorily to the needs of gifted students. However the institution is presented, the issue is moot if the school neither wants to understand or appreciate the requirements that a gifted student has, nor is willing to integrate the needs of exceptional students in its program. So when I heard my acquaintance say of a certain school that "they didn't have the right answers," it was this lack of care to which she was alluding.

For me, lack of care on the school's part can manifest itself primarily in three ways:

- First, the school is lax in challenging a talented student. The school believes in a prescribed course of study that allows limited flexibility in exploring beyond basic academic requirements or offerings. In this instance, the school may be unwilling to create, or give access to, higher-level courses to accommodate the needs of a highly capable student.
- Second, the school feels limited obligation to address a gifted individual's academic inadequacies or educational gaps. For example, an incoming ninth-grader whose ability to handle college-level math courses is offset by poor writing skills may find limited guidance or support in non-scientific course work.
- Third, the school makes nominal effort to alleviate the social and emotional stresses a gifted student may have. A school may not acknowledge, or recognize, that a highly capable student likely is different from other students that typically matriculate in the fall. On top of possible discomfort arising from being academically talented, the gifted student may well face difficult adjustments relating to socioeconomic differences as well as to living away from home and friends.

In sum, the bottom line is whether a school pays lip service to gifted students or whether the teachers and staff are sensitive to the complexities of giftedness and are genuinely committed to helping talented students fulfill their potential.

I know of a student who is to be honored by The College Board's National Forum on Education for having accumulated the highest Advanced Placement scores in the world among those who took the tests last May. This accomplishment included achieving the score of five on all of the eleven Advanced Placement exams he took as an eleventh-grader at an independent boarding school. This particular school, although not known nationally, has an outstanding regional reputation, and, theoretically has the facilities, curriculum, financial resources, and student body to provide for the needs of most gifted students. Yet even with its course offerings, the school could not accommodate fully the academic needs of its award winner.

It is telling, then, that after having worked his way through the published curriculum in English, math and foreign language by his junior year, the student wanted to remain at his school and graduate with his class. That's because the teachers cared enough to add to their already full course load by designing a program of independent study (including Advanced Calculus, Middle English Literature, Homeric Greek, Medieval Latin, and Sanskrit) in which the student is being individually tutored. In essence, the school was committed to this extraordinary student and wanted to create the academic and emotional means for him to continue with his education. I think my acquaintance would agree that this independent residential secondary school has "the right answers."

Patsy Kumekawa and her husband Michael are founders of Scholar Search Associates, a research and consulting firm that provides counsel to independent schools. They have been involved in identifying and rating independent residential secondary schools across the country for capacity to benefit gifted students. Scholar Search Associates currently represents a small number of independent schools in efforts to inform gifted students about their clients' exceptional programs.

Following are descriptions of two independent boarding schools.

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Molecular Magic
Sharon Britton

Perched on a lab stool and wearing an expression of wonder, a student describes the intellectual kick of working with DNA. "You have to take it on faith that it's happening," he says of the polymerase chain reaction – PCR – that makes millions of copies of a segment of DNA for study. Reactions take place in samples one-millionth of a liter small, explains the Phillips Academy (Andover) senior, one of eight students who used the leading edge technology to conduct research during the fall term of Andover's biology-chemistry laboratory course, Bio/Chem 60.

For academically high-flying students, Bio/Chem 60 offers considerable magic: the thrill of working with the most current DNA technologies, the discipline of proposing, planning, and trouble-shooting independent research, the discovery of the joys of collegiality – all topped off by the exhilaration of learning, as a high school student, scientific skills seldom tackled until late in a college career.

From the earliest days of the course (developed 10 years ago), students have been learning how to work with circlets of bacterial DNA called plasmids. They remove the plasmids from bacteria, cut them, and then splice them into new combinations and then reinsert them into new bacteria. A year ago, the course made a leap to the most current technology when the purchase of a PCR machine was made. PCR is the underlying technology used in much current DNA research, including genetic fingerprinting. It is also used in the manufacture of certain pharmaceuticals and to diagnose and follow diseases such as AIDS.

Under biology teacher Charles Wray's guidance, the class conducted a variety of experiments. A couple of students compared the genes of maple and oak leaves from different locations along the East Coast to determine whether their genetic makeup would vary with their environment. Another student explored the effect of microwave radiation on the activity of a restriction enzyme. And, with a nod to fun, a third student analyzed the DNA of classmates to solve a fictional forensic murder mystery posed by Wray.

Students spend the initial weeks learning theory and proper laboratory techniques for each procedure, skills that are often learned piecemeal in college. The training qualifies them as top-notch lab assistants, making them competitive for jobs often held by upper-level college students or even graduate students. "They learn how to run and analyze an electrophoresis gel and how to clone DNA. By their junior and senior college years, they could be publishing things that are reviewed by the scientific community. It's a tremendous leg up for those who want to go on to careers as doctors or researchers," says Wray.

A few don't wait for college. One senior, for example, turned her Bio/Chem 60 experience into a summer internship working at the National Institute of Health on research on the intestinal parasite Giardia. Before starting his freshman year at Brown University, another student worked as a research assistant at New England Biolabs in Beverly, MA.

Time, money, and technology limit the scope of the projects that can be undertaken in a one-term laboratory course. (Wray must take students to Harvard to use a DNA sequencing machine.) But the real value of Bio/Chem 60 is learning the process, says biology teacher and course developer Lydia Goetze. "Students are learning how people actually do science. On TV all the experiments work the first time. But here, they learn what it's really like, that you have to fiddle with an experiment, try different approaches. They learn that colleagues offer advice and insight," she said.

They also get to see Andover's science teachers scramble to keep current with their subjects, says Goetze, who will work alongside her students this term to learn more about PCR. "It's crucial for these young people to see adults working at lifelong learning," she says.

On the verge of college and already considering a career in medicine, one senior in Bio/Chem 60 figures he is now well-positioned to understand the changes in science and research that will explode as the Human Genome Project comes to a close. The 15-year effort of 18 countries, including the United States, will map the entire human genetic code and dramatically change the future of biological and medical research. "I always walk people down this hallway and show them the bio/chem lab," says the student, who serves as a tour guide for the admission office. "I tell them it's amazing we have the opportunity to do this stuff in high school. Things are going to be totally changing in research in the next decade. By learning about this stuff now, I think we have a real advantage."

Located in Andover, MA, Phillips Academy, known as "Andover", was founded in 1778. It is a leader in independent secondary school education and remains one of America's most eminent boarding schools. Contact Jane Fried, Dean of Admission (508) 749-4050.

(see KUMEKAWA, page 24)

Reaping the Benefits of International Baccalaureate

Lynn Crawford and Karen Phillips

As I hold my International Baccalaureate diploma in my hands, I am overwhelmed by fond memories of the challenges I faced and my achievements during the IB program. When I look back over the last two years, I remember how deadlines and examinations encouraged me to work constantly to my potential. I found myself always striving for a higher level of academic achievement.

Nadine Farah, 1995 IB Graduate

The implementation of the International Baccalaureate Program in Texas has challenged young adults like Nadine to stretch the boundaries of learning to an international perspective. The Geneva-based IB "diploma" program was created in 1965 to serve children of diplomats and other students who needed academic credentials accepted worldwide. The IB program for full diploma candidates requires a two-year course of study at the junior/senior level in five core areas (English, mathematics, social sciences, experimental sciences, and foreign language) as well as a sixth subject of choice. Most areas include an oral defense. Through a Theory of Knowledge course, diploma candidates complete 150 hours of seminar work in analytical thought connecting the various disciplines, write a thesis of 4000 words on a topic of choice supervised by an instructional mentor, and complete 150 hours of community service/aesthetic (CAS) involvement. The result is a bilingual individual well versed in a broad spectrum of subjects spanning intercontinental concepts who is capable of critical thinking, independent research and production, and confident in written expression. The IB student possesses an awareness of responsibility to the community and recognizes the importance of assuming a leadership role.

> "The International Baccalaureate program exposes students to different people and cultures, thus helping them to understand others different from themselves and to live with them in harmony."

At a time when American public education is being criticized, it is comforting to witness the continued growth of this innovative approach to learning, the International Baccalaureate Program. Over 800 public and private schools in more than 94 countries around the world offer the IB curriculum, and it is one of the fastest-growing educational programs in the United States. This advanced, comprehensive program of study offers an integrated approach to learning across the disciplines with an emphasis on meeting the challenges of living and working in a global, technological society. Students who take IB courses without completing the entire program to obtain an IB Diploma may earn IB certificates for selected IB courses by taking the IB test for each course.

One of the most commonly asked questions deals with how International Baccalaureate differs from Advanced Placement (AP). Is one better than the other? The IB is a comprehensive curriculum that requires students to demonstrate knowledge and skills through both in-class and outside assessments in six academic areas. Campuses that offer IB must be prepared to offer the total program upon implementation. AP, on the other hand, permits campuses to pick and choose from over 30 offerings. In the words of Thomas Grexa, "The IB was created for the comprehensive process of learning rather than the acquisition of unitary bits of knowledge." While neither program is better than the other, they each have different aims. Students whose main goal is college credit will probably choose AP because Texas colleges offer

credit on a more widespread basis for satisfactory AP test scores than for IB scores. Students whose main goal is preparation for either a career with an international perspective or college in another country may prefer IB because of its recognition at overseas universities. IB diploma students who plan to attend selective colleges in the United States may receive preferential admissions consideration and/or college credit for satisfactory IB exam scores.

Every college has its own credit policies concerning AP and IB test scores, and students should research individual college policies. No high school can promise college credit based on test scores. Texas schools which currently publish IB credit policies include University of Dallas, University of Houston, University of Texas at Austin, Texas A & M University, Rice University, Southwestern University, St. Mary's University, Southern Methodist University, Stephen F. Austin State University, Sam Houston State University, and Ambassador College. Such universities as Harvard, Radcliffe, MIT, Yale, Cornell, Princeton, Stanford, Northwestern, Notre Dame, Rhodes, Marquette, and many others across the nation offer credit and/or preferential admissions consideration to IB Diploma Candidates.

Students who succeed in the IB Program do better than many other groups of students in university level work. Two studies carried out in the 1980's indicated that IB students maintained higher grade point averages at universities and earned higher average SAT scores than students who had not attended IB schools. Clearly, the knowledge and skills obtained in an IB Program prepare students to succeed in higher education. Furthermore, university admissions officials expect students to take the most challenging courses of which they are capable in high school. Students who take IB courses learn to see the world from a variety of perspectives, to examine different points of view, and to see themselves as part of the world community.

Because IB courses are aimed at highly motivated students who seek extra challenge and involvement in their education beyond the classroom, school districts across the country have adopted the curriculum for their Gifted/Talented Programs. Unlike Advanced Placement, which is essentially a test, IB is a comprehensive curriculum that can address the needs of G/T students. This comprehensive approach is best explained in the words of Stasha Hester, 1996 IB graduate, as she comments on her challenge to explore her "weaker areas."

> *I have now come to see how all the pieces fit together to form a complete education of me as a person. The requirement to develop a functional second language "forced" me to complete my fifth year of Spanish. While I could see a practical use of this down the road, I became glaringly aware of it when I began my CAS (community service) work in my chosen area of emphasis. My volunteer work at a local hospital quickly put to use my bilingual skills. For me, I saw how my effectiveness as a true physician would benefit from the ability to communicate with all. I formed positive, supportive relationships and developed my skills as a "person" as well.*

As an intensive advanced program, IB is certainly not designed for every student. Many educators say, however, that IB promotes excellence more broadly in a school as IB teachers learn to teach college-level courses and then begin to expect higher performance from students in their regular classes.

The International Baccalaureate serves the growing demand in American education for course work with a global perspective a necessity as we move into the 21st Century. Greg Pollock, a 1994 IB graduate, acknowledges the fact that the IB program helped him to compete nationally on standardized tests, giving him a significant edge over someone of equal intelligence who had not been exposed to the IB program. However, Greg emphasizes, "The IB experience goes much further than that, by making students compete internationally, which is such an important advantage in our shrinking world."

The International Baccalaureate program exposes students to different people and cultures, thus helping them to understand others different from themselves and to live with them in harmony. This kind of self-realization is perhaps best reflected in the words of IB graduate Jessica Reinisch:

> *"The IB has not made me a new person but it introduced me to new, exciting people and made me aware of new ways of looking at the world. It has changed my way of seeing not only myself but also life around me."*

What more could we ask for our students than a deeper understanding of self and others? If this is indeed our goal, then perhaps the IB program is worth a closer look.

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(from KUMEKAWA, page 21)

Reflections on a New England Boarding School
Dede Miishe Addy

In my southern California schools, there were plenty of honors courses available, and I think many people would have been satisfied with that. But it wasn't honors courses I was after. I wanted conversations. I wanted involvement with interesting people who had interesting ideas and interesting things to say. I wanted to make discoveries for myself by talking with other people and by thinking hard; I didn't want to be told what to think or listen to a teacher drone on.

I don't know exactly what it was about Phillips Exeter that caught my interest, but something did. Exeter … I didn't know much at the beginning. The words "boot camp" came to mind. I had the idea that it was a place of nerds and geeks; I was afraid there would be nothing to do, no social life. What would we do after class? Sit around and read Hamlet? Everyone would be an Einstein or a Exeter. When I read a book for class, I know it's going to be a captivating book and that we're going to have great conversation about it in class the next day. I want to think about it and be part of the conversation.

Physics is my worst subject, and I love going to physics. We study roller coasters and learn about momentum and centripetal force. It does not come to me readily. I have to work extremely hard just to maintain a B average. Doing "okay" in physics doesn't phase me because I know I'm going to get better at it. I also know that I gave it 100 percent. I used to go crazy if I got anything less than an A, but I have learned to take things in stride, to attend the process of learning, not just the result.

In my first year at Exeter I tried so many new things: I acted in a children's play, I directed my own play, I became a dorm representative to the student council, I cut three minutes off my best three-mile cross country time. I tried indoor track. And I tried crew.

I hadn't even heard of crew before coming to Exeter. And when I first saw it, it did seem like the ultimate preppy sport, which is not me. Basically, you sit in a narrow boat with seven other rowers and a coxswain and you row. You row and row and row. The coxswain does not row – the coxswain is a small packet of energy that shouts and screams you to victory. Crew is the craziest, most physically and emotionally demanding sport there is. In our last race of the season, my boat knew we were the underdogs. We should have lost but we went ahead and won. We were goddesses. I had never felt so good in my entire life.

Everyone is constantly growing. It's exciting to watch it happen to yourself but it's also exciting to see it happening to your friends. Your friend will offer some incredibly profound insight into an issue and you will stare in awe because you didn't know she or he was so brilliant. You will go to a student concert and hear the person who lives on your floor play a piece of music so beautifully it brings tears to your eyes. You will read a classmate's story that you think is better than some of the books you have read. I have been in the company of people who are unbelievably inspiring.

Phillips Exeter Academy, in Exeter, NH, is one of the oldest and most distinguished private residential secondary schools in America. Dede Addy, from southern California, graduates this spring after having arrived at Exeter as a sophomore. Contact Thomas Hassan, Dean of Admissions and College Counseling (603) 777-3437.

(from ROOME & COLE, page14)

ing and speaking skills are sharpened by the challenging curriculum. Creating, problem solving, publishing, representing, presenting, and producing are opportunities provided to feed and strengthen their abilities. Student initiative is encouraged. Often students who are given a challenging idea not only meet but surpass the assignment requirements. Their intrinsic motivation dominates and hopefully will serve as the spark that ignites ideas for projects that affect not just their academic lives but their social and professional lives as adults.

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Gayle Roome teaches at Industrial Junior High School and lives in Lolita, Texas. She received her bachelor's degree from the University of Houston-Victoria in 1988.

Donna Cole, Industrial Independent School District Curriculum Director, received her doctorate from the University of Houston in 1998. She is the 1998 TAGT Region III Advocate winner.

(from Hiatt, page 4)

They typically go much deeper than most high school courses into the specific disciplines. However, if a teacher stands up and lectures, the student will not be doing the exploration that is necessary to really achieve depth and complexity. This can only be achieved through classroom discussion, student debates, and/or sophisticated group or individual research projects. Classes should be participatory in nature, with students talking about and using the knowledge they are gaining to achieve greater understanding of the disciplines. In this way, students begin to take more responsibility for their proficiency in a content area and become more committed learners. The need to modify instructional technique is one of the reasons some believe AP or IB is "not appropriate" for gifted students. The content surely is more sophisticated; it is, therefore, an issue of how that material is presented that will make the course appropriate or not appropriate for advanced learners.

AP and IB are not, however, the only options for gifted students, nor should they be. The state plan also emphasizes the need for a variety of options for gifted students. This is because advanced learners are as diverse as any other group of students. When the new high school advanced level program, Distinguished Achievement Program, was being discussed by the State Board of Education, TAGT was the primary advocate for including mentorships and independent study projects as advanced measures. These two options, both of which meet the gifted student's need for in-depth study in areas of strength and interest, can build on AP/IB programs by enabling students to build on the sophisticated knowledge provided in these courses. Mentorships enable a school to link up interested students with community members who are expert in the student's area of interest. The two decide on a project that permits a student to actually work in a field and gain expertise and insight into a chosen field. Independent study does much the same thing, although the student tends to turn for assistance to a teacher rather than an outside professional. To use these options as part of the DAP, students must present their projects to a panel of professionals who assess the work and determine its level of sophistication. By presenting the project to an outside panel, the student learns important skills and gains confidence in his or her ability to work at an advanced level.

Regardless of the prototype: AP, IB, concurrent enrollment, or independent study, it is important that a variety of resources are used in the program. In most cases, even the best textbook will be insufficient to add the necessary depth and complexity to a course. Academic resources, printed, audio, and visual, need to be a part of the repertoire that students may access. Too often, educators give students who have not grasped difficult concepts yet another book to read on the subject. While this may help, it often is useful to present the material in a different medium. This is frequently done automatically in language arts classes. Students may complain about the play they just read, but rave about it after they actually see a production. This same concept is as true in science, history, or other disciplines. The student who is put off by the size of Stephen Ambrose's book, *Undaunted Courage*, on the Lewis and Clark expedition may be encouraged to read it after they see the video series of the same event. Misunderstanding over scientific explanations may be made clearer when the student actually tries the experiment in class. All activities that enhance and deepen a young scholar's grasp of the subject should be employed in a challenging classroom.

Rather than deciding that one option or another is appropriate or inappropriate for gifted students, it may be more important to focus on certain questions as any particular option is being assessed.

- Is the content being presented challenging?
- Do the instructional strategies that are used enable the student to discuss the material, to hear alternative viewpoints, to develop sophisticated products?
- Do the instructional materials, particularly the primary textbook or other resource, provide in-depth explanations and extensive alternative resource lists?
- Do the students appear to be fully engaged in the learning process?

These are all necessary components for appropriate secondary school options for gifted students. If they are present, a gifted student's middle and high school career should be both challenging and academically rewarding.

Evelyn Levsky Hiatt is associate senior director for the Division of Advanced Academic Services at the Texas Education Agency. Past-president of both the council of State Directors of Programs for the Gifted and the Texas Association for the Gifted and Talented, Ms. Hiatt serves on the governing board of the International Baccaluareate Organization and the advisory board for Advanced Placement in the Southwest Region. She is the very proud recipient of the Lifetime Advocacy Award presented by the Texas Association for the Gifted and Talented in 1998.

(from ELAM, page 2)

ing our gifted and talented. Do they work for all of the students? Consider the following comments.

Quotes from Texas Trenches, Grade by Grade

K: "We don't allow kindergarten students to check out books from the school library or to participate in Texas Readers Club. Kindergarten students don't read."

1st: "We don't write our name in cursive until second grade."

2nd: "We don't begin science projects until third grade. We don't want the students to burn out."

3rd: "The parent must have done that science project. No kid would spend that much time on an independent project. It's not even for a grade."

4th: "We have assigned the students to heterogeneous classes. Our gifted students teach the other students. Everyone knows you learn best by teaching."

5th: "We eliminated all honors level courses in middle school."

6th: "We are instituting the team concept. We will split the students into mixed ability teams. Each team will have the same teachers and the teachers will be assigned adjacent classrooms so the students change classes within one small area and do not mix with the other teams. The teams will be assigned tables in the cafeteria and they will eat lunch together. They will become cohesive groups who will help and support each other. We will use cooperative learning techniques with group projects. Gifted students will be split evenly among the teams...."

7th: "We're not here to concentrate on academics. Our focus is self-esteem."

8th: "We expect fabulous things from our students in high school... It's important to take Physical Science before Biology I because freshmen are just not ready for the rigors of Biology I much less Biology I Honors. You kids have never had honors classes before and it would be too much to expect you to handle that class in 9th grade. Furthermore, we limit the number of honors classes our high school students can take."

9th: "What are you doing at College Night? This is for seniors."

10th: "Credit by exam? Okay, you can order the book from Texas Tech. We don't lend the book and it is not available from the library. If you make a 90 or higher on the exam you will receive credit for the course at a non-honors level. If you receive an 89 or below you fail and a zero will be averaged in with your GPA. Then you will have to take the course. No, the zero will not be removed or replaced whatever grade you receive in the course."

11th: "Where are our National Merit Scholars? Why does _____ have more high performers?"

12th: "Wow! Congratulations! You're graduating from high school. It was a long challenging road but you made it! We're so proud of you."

How long will it take us to give our gifted students the choices they need and want so desperately? How long can they wait? Parents are compelled to pursue any and all alternatives to obtain the best education society has to offer for their children.

We need to provide choices that allow gifted students the opportunity to reach their maximum potential. We need to encourage our gifted students to pursue the choices that are open to them. We need to allow them to proceed at their own pace.

Choices for Gifted High School Students

Some of our gifted high school students will find all the options they need on their home campuses if we provide multiple opportunities: gifted honors classes, the Distinguished Achievement Program, Advanced Placement Courses or International Baccalaureate, a mentorship program for gifted students, credit by exam, early graduation, and dual enrollment. (Students should be counseled that most of the top 25 universities do not accept dual enrollment credit for courses required for high school graduation.)

Some of our gifted high school students will need to venture further afield to pursue their potential. One option in Texas which I enthusiastically endorse is the Texas Academy of Mathematics and Science. Visit the TAMS home page at www.tams.unt.edu to investigate this opportunity. Both of my children attended TAMS and relished their experience living for two years with other gifted students who were similarly self-motivated and focused. At Tams the students are challenged to soar. TAMS and other options are covered in this issue of *Tempo*.

Let's stand for our students. Let's stand for choices appropriate to their needs. Let's offer these choices now. Every year we wait is an irreplaceable year they lose. Develop the gifts, enrich the future.

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(from JOHNSEN, page 1)

the home school. Classes are organized so that students may leave campus to meet with mentors. Products created from these in-depth studies are frequently presented to appropriate audiences and evaluated by both mentors and protégés. Students tend to remember these relationships positively, citing their influence on extracurricular activities, accomplishments, views of themselves, and selection of careers. Since gifted minorities and females tend to take fewer advanced level classes, researchers report that mentoring increases their confidence to select more challenging courses. Delacourt examined closely those factors that influence students who participated in Renzulli's Type II enrichment or in-depth studies either with a mentor or another professional. She found that parent support, student interest, enjoyment, flexibility, appropriate audience, and sufficient time, resources, and materials were important factors to successful productivity.

Two studies did examine the International Baccalaureate Program. One showed a high relationship between the program and other high school options for gifted students. The other, a study with high school Canadian students, found that these students scored higher on AP exams than regular students and took more responsibility for their own learning. When compared with regular students, IB students showed high levels of motiviation, task commitment, questioning, independence, intelligence, ability to see connections among concepts, desire to understand, and management skills.

In summary, school districts who include advanced placement, accelerated options, in-depth studies, and International Baccalaureate in their Distinguished Achievement Programs have data to support their decision.

Davalos, R. A., & Haensly, P. A. (1997). After the dust has settled: Youth reflect on their high school mentored research experience. ***Roeper Review*****, 19(4), 204-207.** Based on data from his 22-year longitudinal study of 200 creative children, Terman (1984) concluded that every successful person has a mentor who may have changed the course of his or her life. This study focused on the effects of a high school independent study/mentorship class. In this course, students were able to explore an area of special interest, usually related to a potential career, through a year-long investigation of a research topic. The research was guided by a community volunteer mentor with expertise in that particular field and a teacher for the gifted and talented. The class was arranged as a two-hour block so that students could leave campus to meet with mentors. They also attended class as a group with their GT instructors. Each spring the high school students prepared presentations to report the results of their research to audiences with common interests. Student presentations were formally evaluated by the mentor, the GT teacher, and the students. To determine the long-term benefits of the program, a questionnaire was mailed to 354 former GT students who participated in the Independent Study/Mentorship Program at six high schools during the years 1989-1994. Ninety students responded. While the sample was biased, students most often agreed or strongly agreed with the survey items. The students reported that the mentorship program was memorable (84% agreed or strongly agreed); affected extracurricular activities and accomplishments (64%); contributed to overall academic achievements (73%); helped them select a particular vocation or career (74%); personal view of self (77%); and personal growth and development (64%). The authors conclude that "these programs are a powerful, economically beneficial option for gifted youth, an option that has long lasting effects" (p. 207).

Delcourt, M. A. B. (1993). Creative productivity among secondary school students: Combining energy, interest, and imagination. ***Gifted Child Quarterly*****, 17(1), 23-31.** The sample consisted of 18 students in grades 9 through 12 who participated in an Enrichment Triad Model. Program services included advanced placement courses, honors classes, special seminars, and mentorships, along with opportunities for individual investigations. Using parent questionnaires, student interviews, and formal tests which measured self-concept and attitudes, the author found these factors which influenced creative production: parents who were interested in the project and who encouraged independence; students who pursued interests that were initiated during elementary years; students who genuinely enjoyed the topic; students who were allowed to be flexible in their planning; an audience who was interested in the topic; and students who had enough time, resources, and materials to pursue their topics in-depth.

Garrison, L. (1993). Professionals of the future: will they be female? Will they be ethnically diverse? ***Roeper Review*****, 15(3), 161-164.** The sample in this study consisted of 454 gifted students in the ninth through eleventh grades. Gifted females enrolled in advanced level classes more often than gifted males. Enrollment patterns in advanced level classes also varied widely across ethnic groups with Asian American and European American students enrolling in over half of the advanced level classes and Hispanic and native Americans enrolling in the fewest number of advanced classes. While there were no differences in ability among all of the ethnic groups, Hispanic and native Americans had the lowest GPAs. The authors conclude that support needs to be provided to these minority groups throughout their education to encourage them to take challenging courses and be successful.

Kolitch, E. R., & Brody, L. E. (1992). Mathematics acceleration of highly talented students: An evaluation. *Gifted Child Quarterly*, 36(2), 78-86. Approximately 750 students who had participated in the Study of Mathematically Precocious Youth responded to a questionnaire regarding the effects of the program. These students did well in mathematics courses taken several years earlier than is typical and excelled on AP calculus examinations. The majority of the students took calculus two and a half years earlier than other students. The students also participated in mathematics competitions and summer programs, reported working with mentors, became involved in independent projects, and read mathematics books on their own. In general, the females appeared to be less likely to accelerate greatly.

Lynch, S. J. (1992). Fast-paced high school science for the academically talented: A six-year perspective. *Gifted Child Quarterly*, 36(3), 147-154. This article reports the results of a six-year study of academically talented students, 12 to 16 years old, who completed a one-year course in high school biology, chemistry, or physics in three weeks at a residential summer program. Students demonstrated subject mastery by taking college Entrance Examination Board science achievement tests. Their mean scores were higher than those of high school juniors and seniors. Follow-up studies indicated that students also performed well in subsequent science courses.

McBride, R. O., & Lewis, G. (1993). Sharing the resources: Electronic outreach programs. *Journal for the Education of the Gifted*, 16(4), 372- 386. This article describes Project Outreach which delivered special classes to rural students throughout the state of Louisiana. Since 1991- 1992, 1050 students at 113 rural and isolated school have been taught advanced mathematics, calculus, AP Calculus, computer science, French, Spanish, Latin, German, physics, and survey of the arts. The program is not meant to replace teachers already on the faculty, but to supplement the curriculum offered in the school. Eighty-two percent of the students during the pilot year indicated that they would like to take another telelearning course and 84% said they learned as much as they do in a face-to-face situation.

McCarthy, C. R. (1998). Assimilating the talent search model into the school day. *The Journal for Secondary Gifted Education*, 9(3), 114-123. In this article, the author discusses a model that incorporates content acceleration and fast-paced instruction into the students' regular school day. Middle school students are able to complete four years of high school mathematics or expository writing/literature curricula in two years. Most students have completed the four-year precalculus sequence and writing/literature objectives that compare to honors high school and college freshman curricular standards. The Academically Talented Youth Programs replace the students' home-school math and English class. In this model, everybody wins: "the students enjoy the familiarity of both their home/school environment and the challenge of radical acceleration during the school day; the districts retain the students' enrollment and the revenue from their state-supported tax dollars, and they share in the accolades of any subsequent student achievement" (p. 118). This article discusses a multi-district/higher education collaborative model that incorporates the three components of the talent search model within the school year schedule.

Mills, C. J., Ablard, K. E., & Lynch, S. J. (1992). Academically talented students' preparation for advanced-level coursework after individually-paced precalculus class. *Journal for the Education of the Gifted*, 16(1), 3-17. A sample of 239 academically talented students in eighth, ninth, and twelfth grades who participated in a three-week individualized, flexibly-paced precalculus course completed a questionnaire. Results indicated that the majority of students found the summer course more challenging than courses in their home school, that the individually-paced summer course prepared them as well as prerequisite courses, and that they made A's in subsequent courses.

Miserandino, A. D., Subotnik, R. F., & Kenrick, O. (1995). Identifying and nurturing mathematical talent in urban school settings. *The Journal for Secondary Gifted Education*, 6(4), 245-257. This article is a summary of the results of a three-year Javits grant by the U. S. Department of Education that was designed to identify and nurture science and mathematical talent. Forty-five participants from an inner city high school, a heterogeneous magnet school, a laboratory high school and an elementary school for the gifted were involved in the study. Together with their teacher-mentors, the students spent 10 six-hour days studying and exploring advanced mathematical concepts in number theory, fractals, and probability by way of workshops offered by Hunter College mathematics professors and by teacher-mentors. Students also visited metropolitan area exhibits on mathematics-related topic. Results indicated that students increased confidence in their mathematical skills and selected more advanced mathematics courses in their high schools. The presence of a mentor proved to be a critical factor in motivating students to take advanced courses.

Myers, W. A. (1993/1994). Two plus two does not always equal four (years). *The Journal for Secondary Gifted Education,* 5(2), 27-30. This article provides a guide to dual-enrollment and early college entrance from the perspective of a student who actually participated in such courses. He discusses the preparation course that is required for all students who are planning to dual-enroll in college and high school; the college admission process; and an honors college course. This student felt that dual enrollment was the best path for him and provided a way of continuing his extracurricular activities in high school while at the same time pursuing more challenging work at the university level.

Noble, K. D., Robinson, N. M., Gunderson, S. A. (1993), All rivers lead to the sea: A follow-up study of gifted young adults. *Roeper Review*, 15(3), 124-130. The Early Entrance Program (EEP) has enabled highly capable adolescents in western Washington state to enroll in college before age 15. Students are selected for the EEP on the basis of scores on the Washington preCollege Test, the Stanford-Binet IV, a 20-minute essay, achievement test records, class grades, teacher recommendations, interviews with students and their families, and the student's own motivation. A follow-up survey of 109 participants indicated that these students were satisfied with their decision to accelerate their secondary education, were working in career-related jobs, or were planning to attend graduate school. The authors found no social and emotional adjustment problems.

Olszewski-Kubilius, P. (1998). Research evidence regarding the validity and effects of talent search educational programs. *The Journal for Secondary Gifted Education*, 9(3), 134-138. This article reviews the literature that relates to programs for talent search students. Talent search students who accelerate their coursework in mathematics do not experience burnout, retain their interest, and are able to successfully complete subsequent learning within the subject area. These talent search students continue a pattern of high achievement in high school and college, taking more advanced and accelerated courses and earning more awards and honors. The author concludes that participation in special programs after being identified in a talent search has many positive effects, particularly for females.

Poelzer, G. H., & Feldhusen, J. (1996). An empirical study of the achievement of international baccalaureate students in biology, chemistry, and physics—in Alberta. *The Journal for Secondary Gifted Education,* 8(1), 28- 40. In this study the effectiveness of IB programs was examined. Participants included 708 grade 11 and 12 students from seven high schools in Alberta, Canada. Results from interviews and test data indicated that IB students, compared with regular students, show relatively high levels of motivation, task commitment, questioning, independence, intelligence, ability to see connections among concepts, desire to understand, management skills, and taking responsibility for their own learning. They also scored higher on biology, chemistry, and physics AP exams than regular students.

Poelzer, G. H., & Feldhusen, J. F. (1997). The international baccalaureate: A program for gifted secondary students. *Roeper Review*, 19(3), 168- 171. This article describes the International Baccalaureate Program and compares it to other high school options for gifted students, such as Advanced Placement. The authors conclude that the IB program appropriately meets the needs of gifted students.

Ravaglia, R., Suppes, P., Stillinger, C., & Alper, T. M. (1995). Computer-based mathematics and physics for gifted students. *Gifted Child Quarterly,* 19(1), 7-13. A group of 27 middle and high school students took computer- based advanced math classes at a middle school. Some assistance was provided by a tutor who discussed or corrected off-line work, graded tests, and certified performance in the course. 92% of those who took Calculus AB, the first two quarters of college calculus, 100% of those who took Calculus BC, the entire year of college calculus, and 88% of those who took Physics C received scores of 4 or 5 on Advanced Placement tests. The computer courses were designed at the Education Program for Gifted Youth (EPGY) at Stanford University. The authors concluded that computer-based education makes it possible for gifted and talented middle and early high school students to complete advanced courses in mathematics and physics earlier than expected.

Reilly, J. M., & Welch, D. B. (1994/1995). Mentoring gifted young women. *The Journal for Secondary Gifted Education*, 6(2), 120-128. The Mentor Connection is a community-based learning experience for 11th and 12th grade students enrolled in suburban high schools in the Minneapolis-St. Paul area. Students who participate complete an application and must show evidence of perseverance, ability, creativity, and have an identified area of study. This study reported the reactions of 162 former students to their mentoring experience. The participants reported these effects: the identification of a career; more confidence in their professional and personal abilities; an increase in ability to interact with other professionals; an understanding of the importance of networks; a relationship to their current career choice; and an overall enthusiasm for the high school experience.

Swiatek, M. A. (1993). A decade of longitudinal research on academic acceleration through the study of mathematically precocious youth. *Roeper Review*, 15(3), 120-123. Five cohorts who participated in the Johns Hopkins University Study of Mathematically Precocious Youth were surveyed at the age of 19, some at the age of 23, and some at the age of 33. Students who choose to accelerate in high school do not suffer academically but gain speed in their educational preparation. These students perform well at advanced levels of study, complete college, and attend graduate school in numbers that exceed the national average. In addition, the students also express satisfaction with college and their experiences.

Wilson, V., Litle, J., Coleman, M. R., & Gallagher, J. (1997/1998). Distance learning: One school's experience on the information highway. *The Journal for Secondary Gifted Education*, 9(2), 89-100. The authors provide guidelines for training instructors and facilitators, selecting students, arranging the classroom, and evaluating distance learning courses for high school students. During the 1992-1993 school year the North Carolina School of Science and Mathematics offered three courses to high school students: Precalculus, Science of the Mind, and Advanced Placement United States History. This initial set of offerings have now been expanded to include AP Statistics, Advanced Calculus, Psychology for Living, and the Art of Math and Science. More than 200 students at more than 20 remote sites are now taking these distance learning courses. A module is presented on a particular topic for 60 minutes or less, and then the home school teacher completes follow-up activities. Related teacher in-service activities are summarized and also available at each school site.

(from AP, page 10)

evidenced by a combination of strong subject knowledge and enthusiasm. The College Board suggests that AP teachers have experience and, usually, an advanced degree in the area of the proposed AP course before undertaking an AP class.

Some schools rotate AP teaching assignments. In large high schools with experienced staffs, this policy can help to widen the positive effects of AP on faculty commitment to teaching and induce what is called the "AP effect," the diffusion of higher standards through the entire school curriculum.

Because AP courses typically require greater preparation and the grading of more assignments, administrators try to moderate class size and the number of preparations for AP teachers.

Those preparing to teach an AP course must significantly reassess the expectations, content, approaches, and student assignments that characterize non-AP courses they have taught in the same subject. Administrators can help to ensure success in beginning AP courses by giving teachers as much advance notice of their AP assignment as possible, sending prospective AP teachers to summer institutes/workshops, and encouraging teachers to obtain and use AP publications.

For additional information about the Advanced Placement program, contact the Southwest Regional Office at 98 San Jacnto Boulevard, Suite 1050, Austin, TX 78701-4039 (512) 472-0231 On the internet, the College Board Online can be found at: http://www.collegeboard.org.

Susan Johhnsen is Associate Dean of Scholarship and Professional Development at Baylor University. Editor of Gifted Child Today, she was the principal investigator of Project Mustard Seed. She is author of four tests that are used in identifying gifted students: Test of Nonverbal Intelligence (TONI-2), Screening Assessment for Gifted Students (SAGES), Screening Assessment for Gifted Students—Primary Version (SAGES-P), and Test of Mathematical Abilities for Gifted Students. She is a past President of the Texas Association for the Gifted and Talented.

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(from SHADE, page 12)

San Antonio Chapter of the National Association of Women in Construction provided information aimed toward the industry's future work force — our elementary school children. The *Block Kids Building* program creates an awareness of construction career opportunities while students are in their most formative years. The seminar, specifically for the construction trades, provided numerous female role models for girls. This is an ongoing event; Women in Construction, who use a contest atmosphere to introduce students to the building trade, have adopted the 4th grade G/T students as their annual community project.

These yearly seminars teach elementary students the basics of building design, using 100 tiny interlocking blocks, a piece of string, foil, and a rock. Some of the presenters and/or judges of the student work were presidents of companies, managers, architects, and supervisors. Students were exposed to a variety of different fields within the construction trades. Professionals in the construction trades volunteered to work with the students in teaching them how to read blue prints, design a structure, and learn about various aspects of construction trades.

• On February 18, 1997 author and native Texan Maurine Walpole Liles of Floresville, a descendent of John Nance Garner, presented a history seminar for 5th and 6th grade G/T students. Liles is a writer of historical fiction and has developed novels for children in grades 4 -7. She brought artifacts from the western era and allowed the students to handle replicas of tools, soap, and clothing.

• On May 18, 1998, 145 gifted students were treated to the *Invention* seminar. The curriculum for the seminar followed the TEKS for grades 5 and 6. Also used was an invention book from the Office of Invention in Washington , DC. Some of the events were "Invention Idea Survey," "Mistakes that Worked," "Guess the Invention," "Brainstorming with Straws," and "Practicing Inventive Thinking." Two district teachers, Colleen Abidi and Phyllis Keidash, designed and presented the seminar. Abidi is TAGT's teacher of the year.

Seminars provide gifted students opportunities to broaden their world view through interaction with renowned educators, to be exposed to other cultures, and to share interscholastic networking. Seminars enhance and extend the educational experiences of students by showcasing student work and by including community contributions in support of education.

Dr. Cynthia Shade is a G/T Education Administrator with Edgewood ISD in San Antonio, TX. In addition to developing an instrument for identifying low socioeconomic Hispanic students, she designed and implemented gifted education programs in grades K-12.

(from MCLENDON, page 3)

Look for the February issue of the *TAGT Newsletter* for more information on TAGT and Texas Education Agency legislative recommendations. The February issue will also publish State Board of Education newly-elected officers and committee chairs as well as the make-up of key legislative committees and committee chairs.

TAGT also will post legislative information updates and initiatives of interest to the membership on the TAGT website.

TEMPO REVIEWERS

In addition to the members of the *Tempo* Editorial Board, there are other individuals who have volunteered to review manuscripts submitted for publication. Their knowledge of the field and dedication to gifted education makes them an invaluable part of the *Tempo* publication process.

Colleen Elam, Sugar Land
Karen Fitzgerald, Spring Branch ISD
Tillie Hickman, Beaumont ISD
Shirley Porter, Nocona ISD
Dr. Mary Seay, San Angelo ISD
Diane Warren, formerly El Paso ISD

Q&A Answers to Your Questions

Donna Corley

Editor's Note: This month we inaugurate a new feature, a question and answer column for parents and teachers. The questions will be answered by Donna Corley, a member of the TAGT Executive Board from Conroe ISD. Parents m:© submit questions relating to gifted education directly to Donna Corley, 702 N. Thompson, Conroe, TX 77301, or by e-mail: dcorley@conroe.isd.tenet.edu

Question: Should I be concerned that my son is not focused in on a specific career at this time? He is presently a senior in high school and has been in our district's gifted and talented program since first grade.

Answer: Many gifted students feel overwhelmed by the simple fact that they can be very successful at many different careers. James Delisle and Judy Galbraith address this phenomena in their book, *The Gifted Kids Survival Guide II.* Multipotentiality is both a blessing and a curse. Reassuring the student that it is a positive thing to have many careers to choose from and guiding them in selecting an area of passion and enjoyment will be rewarding for all concerned.

Question: What if my child already knows most of what is being taught in one or more of his or her gifted and talented courses? What options do we have?

Answer: There are several options. They can be separated into two general categories: staying-in-the-course options and getting-out-of-the-course options. Staying in the course options might include mentorships, curriculum compacting, and/or addressing the content using depth and complexity. One out-of-course option is credit by examination (CBE). Texas requires each district to have a policy regarding CBE. From grades six through twelve, the district must provide a test built upon the Texas Essential Knowledge and Skills (TEKS) for a specific academic course. This test may come from three sources: the University of Texas, Texas Tech University, or district-developed tests. As this is a mandate, districts may not charge for these tests. The State Board of Education has also established that each district must offer three dates for taking test from January 1 through June 30 and three dates from July 1 through December 31 every year.

Question: How can I encourage my daughter to stay in her advanced mathematics course?

Answer: The type of encouragement that would be appropriate would depend on what your daughter wants to get out of advanced mathematics. If it is for social reasons, you might want to consider how much time she is allowing in her busy schedule to just "experience" high school. If it is developmental, you might want to consider a pre-assessment test to determine a more productive course. If it is fear of success, risk-taking, negativity, or other related issues, you might want to consider concentrating on confidence builders. Joan Skolnick, Carol Langbort, and Lucille Day have authored a book called *How to Encourage Girls in Math and Science.* This book explains why girls sometimes want to "escape" math and science classes and gives excellent suggestions for awakening them to their potential.

Question: My child wants to serve on the student council at his high school. He is in drama and belongs to other student organizations. I am afraid with all this activity that all advanced placement classes will be too much for him next semester. What might we suggest for him?

Answer: According to the rules as approved by the State Board of Education in May, 1996, districts have to make provisions for furloughs. This is a time away from part or all of advanced academic services without exiting the program. An effective district plan will provide for conferencing to determine the reason for the furlough, monitor the student during the furlough, and conference to determine reentry.

Donna J. Corley, Ph.D., coordinates gifted programs for Conroe Independent School District. She is a member of the TAGT Executive Board.

REVIEWS

It's Alive! Math like you've never known it before . . . and like you may never know it again. **by Asa Kleiman and David Washington. 1996** Prufrock Press, P. O. Box 8813, Waco, TX 76714-8813 (800) 998-2208 Web Site — www.prufrock.com

If you don't find leeches, school lunch gravy, toe length, and prune frosted tofu cake usual subjects for the study of secondary mathematics, this book may change your mind. Consider the following example:

Cows pass a lot of gas. If fact, American cattle add as much as 300,000 tons of methane gas to the atmosphere each day. *If all this cow gas could be collected and sold at gas stations for fuel (let's say gas stations charged $1.25 a pound for cow gas) how much would the country's total cow gas out put per day be worth?*

Or this:

Taxpayers spent $23.4 million on the toilet system for the US space shuttle. *Assuming the toilet has been used 1,209 times (we were unable to locate any actual statistics on this), and assuming the astronauts always remembered to flush, how much has the space shuttle toilet cost per flush?*

These and the other often-hilarious problems are guaranteed to keep the interest of middle and high school students who don't ordinarily find math fascinating. The authors have a sure feel for the kind of topic that interests teenagers.

Each short entry involves two or more steps and requires students to plan a strategy for solving the sometimes revolting problem. Teachers will appreciate not only the increased student interest in math, but also the answer key with in-depth explanations of solutions and necessary equations. Depending on the grade level and ability of the class, each problem should take only a short amount of time.

This book and its sequel, *It's Alive and Kicking*, will provide the students (and many teachers) with a chuckle while challenging math skills.

NEXUS: Antigone and the Greek World, Macbeth and the Dark Ages, The Lion in Winter and the Middle Ages, Romeo & Juliet and the Renaissance, The Grapes of Wrath and the American Dream, and ***The Harlem Renaissance.*** Pallas Communications, Inc., 5017 Archmere Avenue, Cleveland, OH 44144 (216) 661-6548 Web Site — www.nexusbooks.org

NEXUS (or *nextbook*) is a secondary program built around an interdisciplinary textbook in full-color magazine format that links the history, art, science, and music of a period to great works of literature. Each volume addresses a particular work of literature or movement (*Antigone, Macbeth, Romeo & Juliet*, the Harlem Renaissance, etc.) with indepth articles that cover a variety of related topics. Using a cross-curricular approach, concepts are emphasized in a way that breaks down the nomenclature that divides disciplines and stresses the links between art, history, science, literature, and music.

In addition to subject-area integration, each volume of *NEXUS* focuses on one or more thinking skills which are used and reinforced in each of the subject areas. These common analytical tools, used in multiple disciplines, help students value the skill and recognize its universality.

Another interesting aspect of the program is the emphasis on literary art: visual poetry, narrative paintings, and literature-based art like Botticelli's *Primavera* (based on three ancient poems), and the *Medea Krater* (painted 30 years after Euripides' play). Students learn to "read" these works of art, noting the artist's use of metaphor, irony, symbolism, etc.

Included with each carefully researched volume are teaching suggestions not only for the literature teacher, but also suggested team teaching activities for the music, history, art, and science teachers. These teaching guidelines include class activities, suggestions for further research, and additional resources that complement the contents of each volume. Additional information sheets are included as needed to supplement the articles.

With an impressive group of contributors and consultants, Publisher/Editor Jesse Bryant Wilder has put together a stunning set of challenging materials that will provide outstanding learning experiences for secondary students.

A FINAL WORD

Michael Cannon

Among the fragments of the ancient Greek poet Archilochus (c.700 B.C.) are these lines from a fable: "The fox knows many things, but the hedgehog knows one big thing." Archilochus was famous in his own day as a poet and for including references to his own life and circumstances in his work, especially his fables. With this in mind, I would like to adapt this fragment to fit life and circumstances in Texas, replacing the animals with endemic species. While foxes are not unknown here, the characteristics of the ubiquitous coyote are much more familiar. And hedgehogs, being hard to find in the southwest, are better replaced by another unusual animal with similar habits, the armadillo. While zoologists may argue with these choices, the coyote and armadillo will serve my purposes here admirably.

> "The coyote knows many things, but the armadillo knows one big thing."

While there has been scholarly discussion about the exact meaning of Archilochus' fragment, most of us have a pretty good idea of how coyotes and armadillos approach life, with the coyote's cunning often defeated by the armadillo's singular defense. But in addition to the literal sense, there is, as Isaiah Berlin pointed out in his essay "The Hedgehog and the Fox: An Essay on Tolstoy's View of History," a figurative way of looking at the different approaches to life typified by these animals, and the concepts may be applied to human beings as well. On one hand we have those who, like the coyote, pursue many goals and sometimes contradictory ideas, who are pulled in many directions, with no central guiding concept or moral principal. By desire or necessity, they flit from one activity/job/partner to another, with change being their only constant.

Other individuals, like the armadillo, relate everything they say or do to a more or less consistent system of ideas, a single organizing principle that infuses their entire life.

These are, of course, over-simplifications, even for armadillos and coyotes, much less for people. But perhaps there is insight to be gained when we apply this concept to how we approach gifted education in our own circumstances, whether as a classroom teacher, administrator, or parent, whether working for gifted programing in high schools or elementary classrooms.

Are we, by choice or necessity, constantly changing our objectives based on the educational movement *du jour*, going from task to unrelated task, working hard to achieve a worthwhile educational goal, even though one particular goal may drive out another that is equally deserving? Does our concern for gifted students get pushed aside in this sometimes chaotic situation?

While there are of course times when we have little choice but to follow a scattered and unfocused routine, we should, if we hope to have a lasting impact on the education of gifted learners, take a lesson from the single-minded armadillo. What he knows, he knows very well; it is a strategy that has ensured survival through millennia. In the same way, we need to focus ourselves on the survival of gifted programs in a sometimes hostile environment.

And so, at individual campuses, before local school boards, and at the state level we need to continue to work for educational opportunities for gifted learners, never letting the coyotes out there forget that our big idea is something that we know very well.

Berlin, Isaiah. (1998). *The proper study of mankind.* New York: Farrar, Straus and Giroux.

Call for Articles

Summer 1999

Creativity

Creativity, often considered one of the most important characteristics of the gifted learner, is the focus of this issue. Articles may address the subject in general or pursue topics including but not limited to assessment, identification, and programs in creativity. The specific areas of the visual and performing arts will be featured. Magnet school programs in the field as well as outstanding individuals are also possible topics.

The deadline for submission of articles is **March 1, 1999.**

Fall 1999

The New Millennium — Developing the Gifts, Enriching the Future

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Please keep the following in mind when submitting manuscripts:

1. Manuscripts should be between 1000 and 2500 words on an upcoming topic (see topics above).
2. Use APA style for references and documentation.
3. Submit three copies of your typed, double-spaced manuscript. Use a 1 1/2 inch margin on all sides.
4. Include a cover sheet with your name, address, telephone and FAX number and/or e-mail address.

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TEXAS ASSOCIATION FOR THE GIFTED AND TALENTED
Member, National Association for Gifted Children (NAGC)

Volume XIX Issue 2

Spring 1999 Issue
Hispanic Issues in Gifted Education

TEACHING UP to the Needs of the Gifted English Language Learner

Sandra Kaplan
University of Southern California

Copies of a lesson plan were distributed to teachers who were told to critique it to determine its relevance for gifted emergent English language learners. The objective of the lesson was to teach the skill of drawing conclusions from clues presented in a narrative form. Within the lesson was the following:

> Teacher: Read the excerpt from this story. What clues would you use to draw a conclusion? What is the conclusion?
>
> Excerpt — *Mary looked at the clock. She felt a ripple in her stomach.*

One of the teachers attending the staff development session stated that it was inappropriate to ask students who were just learning English to read an excerpt with words such as *ripple* and *stomach.* The teacher reinforced the comment complaining that the text should have been easier for these fourth graders. Another teacher noted that words like *ripple* had multiple meanings for culturally diverse students who are newly acquiring the English language. The teacher continued by saying that the word *ripple* is the name of a beverage, a movement in a body of water, a feeling, a twinge in the body, etc., and that it was unfair to use such sophisticated language with even a gifted emergent English language learner.

This vignette depicts the most controversial issue confronting the education of gifted emergent English language learners, and ultimately, it defines a prejudicial point of view about these students. Addressing this issue offers alternatives to educators attending to the needs and abilities of the emergent English language learner and can serve to eradicate misperceptions regarding teaching and learning expectations for these gifted students.

Gifted AND English Language Learner

While this could be considered to be a semantic rather than a philosophical or pedagogical argument, the coupling of gifted English language learner without the insertion of the word AND

(see KAPLAN, page 20)

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From the President

We Stand for Children . . .

Colleen Elam

Our mission, as the Texas Association for the Gifted and Talented, is to promote awareness of the unique social, emotional, and intellectual needs of gifted and talented students and to impact the development of appropriate educational services to meet their needs. As we continue our mission, we have our gifted children in Texas always on our minds and forever in our hearts.

We stand for children . . .
who **live** to learn,
who **thrive** on discovery,
who rise before dawn to greet the birds by name,
who read late into the night with flashlights under covers,
who collect rocks and feathers and bugs and quotes,
who question details of life and death and God and man,
who immerse themselves in a passionate pursuit of life and living,
who know no time limits, who concentrate with such intensity they are oblivious to hunger or thirst or sleep or mere physical needs.

We stand for children . . .
who **consume** data and remember it,
who detect patterns in chaos,
who communicate in their own language before they can speak,
who dive into science projects and emerge months later,
who write from their hearts and express ours,
who solve math problems, construct bridges, and create kingdoms in their daydreams,
who tread long distances for small clues,
who peel layers and expose essence,
who research and sort and focus and ponder,
who reach tirelessly,
who commit entirely,
who seldom sleep.

We stand for children . . .
who are driven to achieve,
who are stubborn, literal, vocal, and concerned,
who are innovative and creative,
who are organizers and planners and passive resisters,
who are independent and intolerant of interference,
who are ultrasensitive to people,
to situations,
to surroundings,
to the world.

(see ELAM, page 31)

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Volume XIX Issue 2 Fall 1999

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TAGT to Launch Statewide Public Relations Campaign

Connie McLendon

Vision and action are considered the hallmarks of any successful organization. In this regard, TAGT has always been right on track. From the beginning, our members have envisioned great opportunities for gifted and talented students. And for the past 21 years we have taken actions toward making our dream happen. In the continuing quest to promote gifted and talented education in public schools, the TAGT leadership has taken a bold new step, one that I am excited to tell you about.

Public Information Campaign Launch

At its September, 1998 meeting, the TAGT Executive Board approved launching a public information campaign in 1999. The first of its kind for our organization, this undertaking will reflect TAGT's overall mission: (1) to promote awareness of the unique social, emotional and intellectual needs of gifted and talented students, and (2) to advocate expansion of current educational opportunities for these students.

Our public relations efforts will be broad-based and ongoing. We have a large number of people to reach, including students, educators, parents, policy makers, corporate executives, and the general public. We also know that people's attitudes change gradually. Through hearing about gifted and talented students from various sources, we anticipate that citizens will begin to understand the nature and needs of this population of children and the value they hold for our communities, state, and nation.

The TAGT leadership has selected Buckalew & Associates Public Relations, a respected Austin firm, to guide our public relations efforts. They specialize in helping education and health-related associations get their messages out through the mass media in cost-effective ways. In the brief time since being hired, Buckalew has already developed information kits and written newspaper articles promoting g/t awareness.

Goals of the TAGT Public Relations Plan

- Define the terms "gifted and talented" for the general public
- Educate the public and key decision makers about g/t issues
- Establish the need for more resources for g/t programs
- Gain a higher legislative profile and obtain increased funding
- Promote grassroots support
- Build lasting relationships with businesses and other strategic partners

How the Plan Will Work

In seeking a higher public profile, we ask for the continued commitment and help of TAGT members. The Public Relations Campaign is a grassroots movement and we will be calling on the membership to participate in "getting the word out." Success in educating the public will depend on mobilizing volunteers in every part of the state.

From the TAGT office, we will be coordinating the public relations outreach and providing information kits to participants. Media/legislative training workshops will be held to enhance our communication effectiveness. We will reach out to various populations, such as corporate leaders and elected officials, in phases or "waves." With the 76th Session underway, we are on a fast track to get the attention of legislators. We have developed strategies and are finalizing materials that will get g/t information into their hands, and, hopefully, their heads and hearts.

Communicating Our Message

With Buckalew's help, we are crafting messages which we believe will reach each of our targeted populations. These messages can be used in several ways. They can help prepare us for speeches or media interviews by helping us focus our ideas. The campaign will utilize two types of messages: (1) core messages and (2) key talking points. Both are designed to engage the general public, whether a legislator or television viewer.

A core message is the central idea we want the audience to remember from a presentation. One of the core messages we have developed for the Public Relations Campaign is the theme of reaching out: *We have a clear obligation to fully educate gifted and talented students. These are our future leaders, researchers, innovators and artists. Texas public schools must reach out to them for their sake and*

(see MCLENDON, page 21)

Mundos Unidos/Connecting Worlds: *A Two-Way Bilingual Immersion Program for Gifted Students*

Ernesto Bernal

This article documents the early stages of a pilot bilingual gifted and talented (GT) project that incorporates state-of-the-art instructional methodologies and a thorough evaluation design. The process and the planned evaluation research are of interest to gifted educators who wish to provide defensible programs for all their gifted students, including those whose English proficiency is still limited.

Pedagogical Background

In recent years, there have been a number of developments in the field of GT education. One of these is the move towards the inclusion (Kauffman, 1989) of GT students in the regular classroom for all of their instruction under a classroom teacher who has been trained to differentiate the curriculum according to individual students' needs (Johnsen, Haensly, Ryser, Ford, Christian, Davalos, Griffin, Purdy, & Witte, 1997). Another has been the apparent growth in extra school programs for enrichment and acceleration, such as weekend programs (Phemister, Goertz, & Bernal, 1996), Space Camp, Voyager, governors' schools, and accelerated summer programs in mathematics and science. Still another is the expansion of GT programs to include the administration of the Advanced Placement program in high school or the addition of the International Baccalaureate.

> "This . . . program is designed to provide a cooperative setting in which GT students in a special classroom help one another acquire a second language, develop bicultural understandings, and extend their cultural horizons."

One recent attempt to solve the problem of excluding certain gifted children from GT programs—one of the problems that inclusionism has tried to address—has been to provide a special option within the GT umbrella (Bernal, 1998) for a transitional bilingual GT curriculum for gifted students of limited-English proficiency (LEP). More recently, this model has been expanded to bring native-English speaking (non-LEP) GT students together with LEP GT students in a two-way bilingual immersion program, the goal of which is full bilingualism for both sets of children. Using the latest bilingual and second language methodologies, this type of program is designed to provide a cooperative setting in which GT students in a special classroom help one another acquire a second language, develop bicultural understandings, and extend their cultural horizons (Lockwood, 1998).

In a two-way program, the children are not formally taught a language in the way that foreign language classes are traditionally taught. Instead, academic content is taught through the media of two languages. Translation is not allowed and the languages are never mixed. Initially communication is assured through the application of a method called "comprehensible input." Thereafter, each language is matched to different topics and units, so that the lessons are not duplicated in the other tongue. Instruction, then, is divided about 50 percent in each language. To ensure high levels of literacy, reading and writing in both languages are required throughout the curriculum. In the enriched and fast-paced gifted and talented classroom, the two-way program is a rigorous one indeed.

Developments in El Paso ISD

During the 1996-97 school year, the El Paso ISD finalized plans to pilot an elementary bilingual immersion project to meet the needs of LEP GT students without segregating the non-LEP GT students in the process, that is, by offering a bilingual option to the parents of non-LEP GT children. One of the GT teachers at Mesita Elementary School, herself fluently bilingual, initiated a request for such a project, and this was supported by her principal, who pressed the regional administration in the district for permission to proceed. The district's administrative leadership considered making this request into a pilot schoolwide project, so the principal of Mesita School became an integral part of the district's planning. The project would have several advantages, including economy of size, early selection of LEP students, and ethnic integration. The project would be piloted in one school with the goal of making all the participating GT children, regardless of ethnic and first language backgrounds, bilingual in English and Spanish.

Later it was agreed that Mesita School would host the pilot project. It was felt that its multi-ethnic student body, the variety of socioeconomic strata represented, the presence of a successful GT program, and the close ties between the school and its community would give the project every

chance to succeed, yet expose any major deficiencies or areas where performance might be lacking. The faculty of Mesita was contacted to receive their consent and cooperation, because the pilot project would not only require their assistance in nominating children but also because such an innovative program would perforce spend a disproportional part of the school's budget at startup and probably give the participating teachers a lot of publicity. The option for GT children to enroll in this bilingually differentiated curriculum was then explained to the parents, and to everyone's surprise, all of them agreed to place their children in the new program. In fact, many of the parents had been requesting Spanish instruction for their non-Spanish speaking children, while also requesting a more comprehensive or whole-day GT program for the early elementary grades. *Mundos Unidos*/Connecting Worlds, as the project at Mesita School would come to be called, became the entire GT program in grades one to three, with provisions to add one grade per year. Three teachers were initially selected, including the teacher whose idea had led the district to this point.

The GT students were basically selected according to the district's general practices. The only changes were that (1) priority was given the students who had attended Mesita's kindergarten program; (2) authentic assessments and a review of successful performance settled any questions of admission of students in the "grey area" or on appeal, especially for LEP students; and (3) the parents of the selected children had to commit to keep the children in the program through grade five by signing a contract.

A consultant was retained for some further planning and to ensure that the questions of interest to the fields of bilingual education and GT education would be addressed. Working with the designated internal evaluator, the consultant drafted and, after circulation and input, later finalized the plan to evaluate the first year's project and establish a basis for any subsequent evaluations. This plan included a provision to consider all of the first year's students as Cohort I. Three subgroups representing the different grade levels and further divided by their LEP/non-LEP status would help monitor Cohort I's progress on a longitudinal basis, and similar arrangements could be made for any later cohorts and expansion to other grade levels. In this way the successes and experiences of the Mesita project would guide the district in deciding whether this approach is a viable way for other schools in the district to offer to integrate the education of LEP GT students with non-LEP GT students.

The three *Mundos Unidos* teachers were given some limited time to visit innovative bilingual programs in the west Texas area as well as other GT programs. During the summer of 1997, the three teachers received extensive training at the district's expense on GT and bilingual eduation. Among the materials the teachers studied were the following:

- Smutny, Walker, and Meckstroth's *Teaching Gifted Children in the Regular Classroom.*
- Johnson's *The Faces of the Gifted.*
- Winebrenner's *Teaching Gifted Kids in the Regular Classroom.*
- Lazear's *Seven Ways of Knowing: Teaching for Multiple Intelligences.*
- EPISD's *Schoolwide Enrichment Training*, a manual that includes Renzulli's Enrichment Triad.
- Various handouts from *Schoolwide Enrichment Extra* (a newsletter from Renzulli's Confratute) and from the Texas Association for the Gifted and Talented (TAGT).
- Starko's *It's about Time: Inservice Strategies for Curriculum Compacting.*
- EPISD's *GT Handbook* on differentiated curriculum, writing, thinking skills, the affective domain, etc.

All three teachers are endorsed in both bilingual and GT education. They completed the district's GT course, the district's bilingual course, the work or experiential classroom hours as needed, and took a special topics course at the University of Texas-El Paso (UTEP) on two-way bilingual education.

In addition the three teachers received considerable professional exposure during the project's first year and a half. The Texas Education Agency's (TEA) Office of Advanced Academic Services visited the program twice, the first time with the Commissioner of Education, and the second time with several visitors, including the Executive Director of TAGT and several GT coordinators from other parts of the state. The teachers presented at the Bilingual Education with Emphasis on Math and Science Conference (BEEMS), which was held on the UTEP campus, on integrating language into math and science, and at the West Texas Association for the Gifted and Talented. During the fall 1998-99, these teachers presented at two conferences, one sponsored by TEA in September, the other by TAGT in December. The teachers report that they like the attention and the opportunity to expand their skills to include presentations at professional meetings. All of the *Mundos Unidos* teachers, including those new to the project this year, have continued to receive some specialized training from a faculty member in UTEP's College of Education.

FEATURES OF THE EVALUATION PLAN

The *Mundos Unidos*/Connecting Worlds Project is a pilot GT program that involves a two-way bilingual immersion methodology and both native English-speaking and Spanish-speaking children. The plan has, then, the characteristics of a gifted program and an innovative bilingual program. Indeed, the use of two languages *as media of instruction* in an ethnically and linguistically integrated setting is

(see BERNAL, page 18)

Early Entry College Experiences from the Perspective Of Gifted Hispanic Students

Donna Fleming, Karen Scharff, & John M. Henderson

Stroll into McConnell Hall, the dormitory which houses students at the Texas Academy of Mathematics and Science (TAMS) at the University of North Texas, and you will notice large and small groups of students talking, studying, and generally "hanging out." What you will also notice is an exhilarating mixture of apparel, hair styles, skin tones, physiques, and personalities reflecting the diversity of the TAMS community. The experience of living and learning in the TAMS environment was described by TAMS graduates who were interviewed in a recent article for a publication by the UNT alumni association. Carrie Ives, class of 1993, in reflecting back on her TAMS experience, stated, "I was definitely exposed to a lot of diversity and people with backgrounds different from mine. That has served me well." Vanessa Flores, a member of the class of 1995, expressed a similar opinion. "The academy was a great experience for me. Not only has it broadened my mind with knowledge, but it has also opened my eyes to many different cultures and backgrounds."

> "... Several of the students interviewed have found that TAMS provides them with a genuine opportunity to get to know peers, learn ways of relating to people, and become more self-reliant."

Maintaining a diverse student body representative of all regions of the state of Texas is a primary mission of TAMS. However, in spite of diligent efforts to spread the word about the TAMS opportunity to qualified students in all regions of the state, Hispanics apply in proportionately fewer numbers when compared to Caucasians and Asian-Americans. Given the high percentage of Hispanics in Texas and particularly in the South Texas and Border regions, this disparity in the applicant pool has been of concern to us. In order to gain information that would be helpful in the recruitment and outreach process, a survey of qualified students who did not apply was conducted by TAMS admissions and research staff. One finding was that Hispanic students who responded to the survey indicated more reservations about their ability to academically succeed here than did students in other ethnic groups. Interestingly, a strong desire to remain at their home high school was not a deterrent to the application process.

The purpose of the current discussion is two-fold. First, excerpts from interviews of Hispanic students enrolled at TAMS provide insight into their motivation to apply to this early college program. In addition, it is our objective to present themes of experience that were common to the students interviewed in order to better understand the challenges that they faced. As suggested by Frey (1991), interview questions targeted social and emotional aspects of adjustment in addition to academic issues.

Since the students maintain their high school class standing while also attending college, they are juniors and seniors. They represent the diversity of TAMS, and of Hispanics who attend TAMS. The juniors, David Garza, Robert Gonzales and Erica Esqueda, are 16 years old. David is from Houston, where his father works for an airline and his mother works as a substitute teacher. He hopes to become a research scientist so he can pursue his interests in physics and astronomy. Robert's parents are teachers in Laredo, and he expects to follow the family tradition and become an educator, probably a professor. Although he considers himself Hispanic, Robert notes that his father has German ancestry. Erica grew up in Mission, where her father works in the air conditioning business, and her mother teaches math. She remembers being encouraged to apply to TAMS after talking with another TAMS student she knew from home. Miriam Mendoza, also 16, is a senior. She was born in Laredo, spent her first six years in Mexico, and moved back to Laredo in the second grade. Her father is an assistant restaurant manager, and her mother is a homemaker. She plans to study biology, and is considering medicine or some type of scientific research as a career. Luis Tapia and Sara Oyarce are seniors, both age 17. Luis grew up in Killeen. His father is retired from a career in the army followed by work as a prison guard, while Luis' mother has worked at home raising Luis, his twin sister, and other children she babysits in the neighborhood. His parents are from Puerto Rico. Luis has always wanted to be in the army and hopes to attend West Point. Sara was born in Peru. Her father is Peruvian, and her mother was born in Colombia. She came to the United States when she was three years old, and spent most of her childhood in Fort Worth. Sara's father teaches computer science at the university level,and her mother is a

kindergarten teacher. Sara hopes to become a mathematician. Chris Suarez of Grand Prairie is 18. His father works as a billing clerk, and his mother is a receptionist. He aspires to a career in psychology and perhaps eventually politics.

When asked to discuss their motivation to enter the program, most of the students conveyed their desire to seek an education that would challenge them and that would help them get a head start on their college years. Luis relates that after being recognized as one of the best math students in the state, he was a freshman when ". . .I got a letter in the mail about it, and I thought it (TAMS) was kind of cool. So did my parents. . . I have a twin sister, and they knew that both of us would be going to college at the same time, so it would be better—you know, less financial worry, if I went two years early, and of course with the scholarship, they thought it was a good idea."

For other interviewees, their motivation was encouraged by dissatisfaction with their previous high school education. According to Sara, her hometown high school did not provide a challenging environment. "At my old high school there was absolutely no motivation in anyone. The students had no goals." She learned about TAMS as a freshman, as well as from a family friend. Robert was a freshman when he toured UNT and visited TAMS with his parents. He decided that TAMS seemed a better choice than continuing his education at his hometown high school. David also attended a preview day, and was impressed with the presentation made by Dr. Brent Jones, Director of Admissions at TAMS. Like Luis, Chris was recruited due to his math ability. Chris saw TAMS as an opportunity to be challenged academically, but had mixed feelings about leaving his childhood friends, especially his friends he knew from high school band. "My friends from band were basically like another family because we did tons of trips and activities together. Going to TAMS was like leaving behind another family besides my blood relatives." Miriam reported no mixed feelings about leaving her best friend behind but acknowledged that she first applied to TAMS" to prove to myself that I could do it—I wasn't stupid. It was a challenge to see if I was smart enough to get in."

In addition to the appeal of a quality education and the thought of increased marketability for college admission and career opportunities, the students interviewed reported that their parents supported their attendance at TAMS. In each situation, parents viewed TAMS as a valuable and worthwhile opportunity to advance the education and careers of their children. David notes, I asked my father, and he gave me encouragement and direction." Robert remembers that his parents were so enthusiastic about the possibility that they "brought me up here and showed me around my freshman year in high school." Luis, Erica, Sara, and Chris recall that their parents supported their application to TAMS because they knew their children would benefit from the experience. Including the family in the recruitment process appears to be an important strategy when encouraging Hispanic students to apply to the TAMS program. Sara, David, Erica and Miriam remember that although their parents supported their educational goals, they expressed concerned about their children leaving home to live so far away. Reports David, "My father was for it; my mom was more concerned. She didn't want to lose me so quickly, but she knew I'd be happy up here." Asked if being a girl might have affected their feelings about letting a child attend school away from home, Sara replied, "It didn't matter. They just didn't want to lose me so young."

Once here at TAMS, the students interviewed seemed to agree that the academy offered the challenge and educational rigor they were anticipating. Robert reports that at TAMS, "If you're not sleeping, you're studying." Miriam recalls that her first semester at TAMS was one big academic stress, a drain to her emotional and cognitive spirit. "I was homesick. It was very stressful. The second week I went to Dr. Fleming (TAMS Director of Counseling and Research) and told her I wanted to go back home. She told me to give it another week and see what happened. Then a senior started tutoring me a lot and she really helped me emotionally and academically. When I look back on my first semester, I don't know how I made it." Sara recalls "Last year I didn't study at all except for one class, and that wasn't good for my GPA. This semester I've been studying for everything. It's really cool. I've been learning about lots of stuff." Sara adds that it is important to distinguish between wanting good grades and wanting to learn, and that people at the academy, students and faculty alike, are too concerned about grades and not concerned enough about learning. Erica reports that she had difficulty adjusting to the academic demands at TAMS, but she made "friends that always kept me in high spirits."

From a social perspective, several of the students interviewed have found that TAMS provides them with a genuine opportunity to get to know peers, learn ways of relating to people, and become more self-reliant. Luis believes he is developing interpersonal skills that would not have flourished as they have if he had remained at his high school. He explains, "Since you live with everybody, you have to develop social skills to talk with all these new people around here . . . Now it's a lot easier for me to go up to somebody and say, 'Hi, my name's Luis, what's yours?' It's something I probably would not have learned until after I got into college if I would have stayed (in Killeen)." The relaxed and friendly nature of the TAMS environment has been a relief for David, allowing him to be himself and enjoy the TAMS community. A disadvantage to living in the TAMS community, according to Robert, is that you rarely have a time and place of retreat. He points out, "Although you do see your friends every day, the people who annoy you—you see them every day too." Sara reports that the emphasis

many students place on their social lives can often result in a sort of burn-out, because they may not realize that "people can just be cool by being themselves."

It has been a big change for all of these students to leave their high schools. Coming from South Texas, Robert, Miriam, and Erica grew up as members of the ethnic majority, and have now joined a more diverse, though Anglo-American majority community. As Robert notes, "It's just different here. My high school is predominantly Hispanic. Coming here ... Wait! Diversity!" Asked whether they had experienced anything negative from their peers about being Hispanic, the students said that race did not seem to be an issue at TAMS, except as Sara points out, some students "don't understand that you don't have to be Mexican to be Hispanic." For Miriam, Erica, and Luis, the fluent Spanish speakers of the group, they have to wait to get home before they can speak Spanish with friends and relatives.

In conclusion, we attempted to capture and clarify the experiences of Hispanic students who are participating in the TAMS program. One apparent finding from our discussions with the students is that their parents value high educational and career goals for their children. These goals were shared by the students who voiced dissatisfaction with their current educational environments and need for greater challenge. These goals and needs superceded any fears or concerns of parents and students about leaving home to attend college early. For most of these students, living away from home meant being separated by great distances, such as the 550 mile drive from Mission to Denton. Another finding is that the academic curriculum was indeed challenging, but as the students adjusted to the rigors of college classes, they gained confidence in their abilities and increased their knowledge of how to study and learn. The personal growth that results from mastering such challenges is difficult to measure, but it will certainly help prepare these young men and women as they pursue future goals. In addition, the students have experienced social and emotional development which is a byproduct of living fairly independently among a group of peers. These skills should also serve them well as they leave TAMS for other educational and residential settings.

In further evaluating these interviews, it is noted that the experiences of David, Robert, Erica, Miriam, Luis, Chris, and Sara are not unique to them because they are Hispanic. For example, our data collected from student satisfaction surveys indicates that about 75% of the students find the academic work highly challenging, and 85% feel that TAMS provided them with educational opportunities they would not have gotten at home. Follow-up surveys with TAMS graduates indicate that they rate the social and emotional development they experienced at TAMS as one of the greatest benefits they received, and our demographic surveys indicate that a large majority of our students come from parents who are well educated . The only difference noted for some of the Hispanic students appears to be the first-time experience of minority identity within a diverse community. However, no concerns were expressed by the students except for the decreased lack of opportunity to converse in Spanish with family and friends. In fact, being part of a diverse student community appears to provide another opportunity for personal growth for the six interviewees, as well as the other 380 students who reside at TAMS. Hopefully in future years they will echo alumnus Carrie Ives' sentiments: "That has served me well."

For the TAMS program, these interviews, as well as other information-gathering projects, have helped us understand what attracts youth from diverse backgrounds to this accelerated academic program. We know that we need to keep emphasizing family involvement in the recruitment and retention process. Since the students develop strong peer relationships here and frequently support each other in the adjustment process, we are increasing the student and alumni participation in spreading the word about the TAMS opportunity. In addition, we are tracking and surveying our graduates so that we can report to prospective students and their families about the progress and success of our graduates. We want bright and motivated students to know that they can achieve their goals just as David, Robert, Erica, Miriam, Luis, Chris, and Sara are doing, through hard work and perseverance.

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Cada Uno Agradable

Evelyn L. Hiatt

Educators who are involved in services for gifted students have an enormous responsibility. They not only must find all the students who need advanced level services, they must also assure that those services are inviting to all students who need them. In Texas, more than many states, this responsibility means reaching out to large numbers of non-English speaking families and students and providing opportunities for them to both show and develop their strengths.

Often, when we begin discussions on services to non-English speaking students, the conversation immediately focuses on student assessment. While there is little doubt that student assessment is an issue, it is one that has been explored extensively with various successful alternatives available. Rarely, however, do we talk about the services themselves, how we present those services to the parents and families, or how the community may perceive our services. If we do not analyze these topics, we may be identifying deserving students only to discover that they do not want what we have to offer.

Beginning in 1997, the Texas Education Agency initiated a GT/Bilingual Task Force that explored the issues surrounding services to non-English speaking students who were gifted. The task force was composed of leaders in the field of either gifted or bilingual education. To start, we asked each group of educators to list the non-negotiables of their field. When we examined the two lists, we discovered that they were remarkably similar and combined them into a list of seven non-negotiables (see below).

It is important that the two groups both stressed the need for services to be relevant and meaningful for the learner and stressed that educators must hold high expectations for all students who participate in them. The task force recognized that if it was important to identify speakers of other languages for advanced level services, it was equally important to assure that the services had been adapted to be compatible with the cultural mores of the students. Note that "adapting" does not indicate "lowering" standards. Both educators of gifted and bilingual students emphasized that expectations must remain extremely high for advanced level students.

BILINGUAL AND GIFTED NON-NEGOTIABLES

- Assessment instruments and procedures should rely on both non-verbal quantitative measures and on information from parents, teachers, and students.
- Educators in both gifted and bilingual education should be part of the assessment process.
- Teachers and administrators who provide services for gifted bilingual students should receive training in both gifted and bilingual education.
- The student's primary language should be extended or enhanced in services provided advanced level students.
- Curriculum expectations should be high and the same student results should be expected for all students who receive advanced level services.
- Services should be sensitive to the cultural background of the students.
- Parents should be informed and included in program planning and implementation.

What, then, do we mean by "adapting services?" It is far more than showing students different costumes or having them eat different kinds of food. The attributes of depth and complexity discussed in earlier issues of *Tempo* serve us well in this case. One way we "add complexity" is by exploring "multiple perspectives." Surely this is the most obvious way we adapt services, particularly in the areas of history and literature. How do different cultural groups view the family? What might we infer from a culture that uses the same word for "mother" that it uses for "aunt?" When we add depth to a discipline some of the things we study are the rules and details of that discipline. Students might discuss the rules that distinguish representative from totali-

(see HIATT, page 25)

Maximizing High Potential In Hispanic Students

Dorothy Sisk

Historically there has been underrepresentation of students from culturally and linguistically diverse groups in educational programs for gifted students, although there is widespread agreement that outstanding talents and skills can be found in every ethnic and socioeconomic group (Baldwin, 1985; Clark, 1989; Perrine, 1989; Frasier, 1979; Gallagher & Kinney, 1974; Karnes & Johnson, 1987 and Sisk, 1987). There have been a number of research studies on successful strategies for improving educational opportunities for the Hispanic student and two major strategies emerge from these studies: early intervention with an emphasis on thinking skills, and parent involvement.

Educational Issues Related to Hispanic Students

Several misconceptions about Hispanic students need to be refuted. One misconception is that Hispanics are an underclass or subordinate (Ogbu, 1978), and educators tend to view these students from a remedial or deficit perspective. Second, some educators have not believed Hispanic students can be gifted or have talents (Rodriguez, Prieto & Rueda, 1984). Belief in their giftedness is essential if Hispanic students are to be identified and nurtured in educational programs. A third misconception is that bilingualism is a deficiency (Rito & Moller, 1989). A paradigm shift in education is needed to view bilingualism as a strength and the development of bilingualism as an important focus for all gifted students.

Many Hispanic families, whether they have lived in the United States for generations, or arrived recently, reflect a different view of parental association with schools and the duties of the teacher than Anglo-American families. In Mexico and Central America, teachers receive enormous respect, and Hispanic parents do not feel they, as non-experts in education, should make educational decisions. Many Hispanic parents also feel uncomfortable visiting the classroom. Also, education is not considered a dynamic force for socioeconomic mobility in Mexico and Central America, and often a child is needed at home or in the workplace with education being interrupted or deferred until a later time. This particular ethic often carries over to the Hispanic culture in the United States (Perrine, 1989). As a result, parental support for consistent school attendance frequently is a problem, as is the provision of a time and place for a child to study at home.

An additional complicating factor is that sometimes a communication gap develops in the Hispanic parent-child relationship when parents conduct their lives predominantly in Spanish, and their sons and daughters develop a predominant facility in English. As a child grows older, there is less sharing concerning issues and decisions facing young people. The family support system, previously so important, may become perfunctory.

Characteristics of Hispanic Gifted Students

No one profile of a gifted Hispanic child exists. The Hispanic culture in the state of Texas is composed of numerous groups with differences in history, language and customs and length of residence in the United States. The amount of urbanization and political and social strengths are also important factors, as is poverty. Two key areas that distinguish the Hispanic student from the Anglo-American student are 1) language skills and proficiency, particularly for bilingual or monolingual Spanish students; and 2) complex demands resulting from living in two cultures (Udall, 1989).

One of the most efficient ways to increase the number of Hispanic students within a given gifted population appears to be to focus on developing a pool of potentially gifted students who are taught thinking skills in conjunction with English as a Second Language (ESL) instruction (Maker & Tissot, 1995; Howells, 1998; Sisk, 1998). In this way, students who may be gifted do not have to wait to be assimilated into English speaking classes to receive instruction in strategies useful for the gifted (Rito & Moller, 1989).

EXAMPLES OF SUCCESSFUL PROGRAMS

This approach was demonstrated in Texas in Project STEP UP (Systematic Training for Education Programs for Underserved Pupils) directed by Sisk (1993) with project sites in Aldine ISD in Houston, El Paso, McAllen, and San Antonio. In Florida, where the STEP UP project was introduced in Daytona Beach and Tampa, educators found that by teaching critical and creative thinking skills to high potential Hispanic students, their ability to score above the 130 IQ level on the Wechsler Intelligence Scale for Children-Revised version (WISC-R) was increased, and they increased their proficiency in their second language. At the conclusion of the three year project, over 50% of the students participating in the project were identified as gifted.

Project STEP UP worked collaboratively with a number of school districts to develop alternative criteria for identifying the students, including a checklist (two of the seven scales are included in Figure 1 (Sisk, 1998) based on current research on minority and culturally diverse students. The checklist with seven scales (Problem Solving, Social Sensitivity, Communication Skills, Responsibilities, Sense of Humor and Psychomotor) was used as a pretest/screening instrument to identify high potential children for an initial talent pool. Alternative tests were used such as the Raven Progressive Matrices, the Developmental Cognitive Ability Test (DCAT) spatial subtest and problem solving tasks developed by Maker (1995) based on the Gardner (1983) Multiple Intelligences model. New approaches to teacher training and professional development were used including the strategies of coaching, empowering, focusing, facilitating, and transforming. The curriculum focused on thinking skills, using the Guilford (1967) Structure of the Intellect (SOI) battery of tests to identify the students' predominant learning processes, an integrated language arts with arts curriculum developed by Carolyn Bronson in Project Suc-

FIGURE 1. TEACHER AWARENESS MINORITY CHECKLIST

SOCIAL SENSIVITY

- Wisdom of life experience *(Montgomery, 1989)*
- Keen sense of justice, quickly perceiving injustice *(Hillard, 1976)*
- Awareness and appreciation of people; interpersonal skills *(Bernal, 1976; Renzulli, 1973)*
- Manipulative behavior *(Torrance, 1977; Cronbach, 1977)*
- Willingness to help others, enjoying being helpful ***(Bernal, 1976)***
- Sense of the future *(Wong & Wong, 1989)*
- Impatience *(Locke, 1979)*
- Large social orientation *(Montgomery, 1989)*
- Responding to external motivation; wanting to please *(Baldwin, 1985; Frasier, 1979)*
- Community-based entrepreneurship *(Cronbach, 1977)*

COMMUNICATION SKILLS

- Articulateness in role playing and storytelling *(Torrance, 1977; Darnell, 1979)*
- Recalling old legends *(Maker & Schiever, 1989)*
- Attitudes unfavorable to participation in discussion groups *(Clark, 1989)*
- Proficiency in nonverbal communication *(Hilliard, 1976)*
- Frequently interrupting others when they are talking *(Locke, 1979)*
- Formulating pertinent questions *(Chen & Goon, 1978)*
- Multilinguality *(Montgomery, 1989)*
- Rapidly acquiring language when given opportunity *(Bernal, 1976)*
- Enthusiasm in class discussions *(Chen & Goon, 1978)*
- Engaging adults in lively conversations *(Bernal, 1976)*

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cess, Taba's inductive thinking strategies (Taba & Elkins, 1964) and Parnes' creative problem solving strategies (Parnes et al., 1977) interwoven into a thematic interdisciplinary curriculum.

Project TEAM: Teaching Enrichment Activities for Minorities

Dade County in Miami, Florida with a significant Hispanic population (41.7%), instituted a program to address the needs of high achieving minority students with an emphasis on thinking skills. By providing students from lower socioeconomic (SES) backgrounds with encouragement and the skills needed for success in advanced programs, academic achievement became a matter of pride for the individual families, peer groups and communities (Rito & Moller, 1989). Inservice training was provided prior to program initiation and throughout the pilot project period. Training sessions focused on the nature of intelligence and a detailed explanation of Guilford's (1967) Structure of the Intellect (SOI) model. Teachers were trained in the administration of the SOI test, in the interpretation of the scores and construction of individual student profiles and in remediation techniques using SOI and related materials. The Building Thinking Skills program (Black & Black, 1985) with its Piagetian method of introducing each thinking skill was used along with attribute blocks and Venn Diagram manipulatives. Students were encouraged to explain their reasoning, how they arrived at correct answers, and to give a rationale for not selecting the other responses. As the students described and elaborated on their answers, their language usage was enhanced. Results of the Project TEAM were dramatic; 28% of the original population of TEAM students were placed in classes for the academically and artistically talented after the first two years.

Palm Beach Potentially Gifted Student Project

The Palm Beach, Florida project was committed to the notion that standardized test scores and typical checklists of gifted characteristics fail to identify culturally diverse gifted students. Howells (1998) helped his teachers understand the cognitive and behavior strengths in their culturally different students by engaging them in consideration of questions such as does the student:

1) Exhibit a high level of nonverbal fluency;
2) Display leadership abilities;
3) Learn well through the use of manipulatives;
4) Show creativity in the visual and dramatic arts;
5) Demonstrate proficiency at solving concrete, practical problems;
6) Show ability to express feelings and emotions; and
7) Demonstrate a sense of humor?

Out of numerous discussions with teachers Howells identified 500 candidates for the program. The next step was to asses those students' strengths and weaknesses. The Structure of the Intellect (SOI) Test of Learning Abilities (Meeker, 1975) was used. Using test results and teacher recommendations, five groups of 16 students were selected to participate in the program experience when they entered grade 4. The program was designed to include enrichment, affective, and academic components. In the enrichment component, there was an emphasis on thinking skills using Black and Black (1985) Building Thinking Skills and Organizing Thinking II (Black and Black, 1990). The affective component focused on increasing students' self-confidence and reversing negative attitudes. In the academic component, the curriculum was presented in an accelerated manner, and students moved at their own pace. Cooperative learning and team work were stressed. Results indicated that 25% of the students were able to qualify for the Palm Beach gifted program with IQs of 130 and above. Students also showed impressive gains in both reading and mathematics. A comparison of their scores in grades 3 and 4 consistently showed average gains of 12 to 15 percentile points. On the Peabody Picture Vocabulary Test (PPVT) 80% of the students achieved gains with an average gain of 10 points. However, the greatest gains were in thinking skills. Teachers in the project reported that the students' ability to think logically and concisely was greatly increased and they were able to write with clarity and use the thinking skills throughout the school year.

Problems Faced by Hispanic Gifted Students

One problem that often emerges when Hispanic students are identified for the gifted programs is their low school success. This may be due to gifted programs focusing on developing abilities valued by the majority culture. In this academic type of program a Hispanic student must work twice as hard to succeed, overcoming obstacles of differing value systems, behavioral patterns, inadequate academic preparation and differing language.

In addition, large numbers of Hispanic students after placement in gifted programs withdraw upon experiencing difficulty with academic assignments. With limited English proficiency and disadvantaged backgrounds many Hispanic students have had limited experience with abstract, higher level thinking skills, advanced vocabulary, and communication skills. Hispanic students enrolled in gifted programs also receive considerable peer pressure to drop out of the program and at the same time receive heavy parent pressure to succeed, resulting in considerable stress for the students (Rito & Moller, 1989) ; (Sisk, 1993).

Importance of Parent Involvement

One way to combat the problem of low student success is parent involvement. Seminars for parents were developed by Shannon (1993) to provide parents information on the key areas of focus in Project STEP UP: critical and creative thinking, communication skills, and self concept. Each

(see SISK, page 22)

Gifted Latinas' Experiences in a Magnet Program

Ned Moss

What is the impact of the school socialization process for gifted Hispanic females (hereinafter referred to as gifted Latinas, or GLs) in a gifted program? How are their cultural values affected and/or changed in the new multicultural setting? What are the difficulties experienced by Latinas attending a Magnet Program for gifted and talented (G/T) students in a school far away from their neighborhoods? What are the factors affecting these GLs, and what characteristics do they have in common that help them to survive all the affective dissonances? This ethnographic study, conducted over a period of two years in a magnet high school for gifted students in a large urban school district, was designed to answer these questions. (For purposes of this article, the gifted magnet program will be referred to as the program.)

> "What are the difficulties experienced by Latinas attending a Magnet Program for gifted and talented students in a school far away from their neighborhoods?"

The program was located in a predominantly black high school in which the program student population constituted approximately 15% of the total school population. The program student population was 50% African- American, 15% Latino, 29% Anglo, and 6% Asian. At the time of the study, the Latino population was in the minority, both in the program and in the school.

This study was conducted with GLs who were juniors and seniors in the program during 1994-95, and Latinas who were graduates of the program between 1985 to 1993. The major question addressed was how the socialization in gifted education affected these young women.

The initial entry into a secondary gifted program is a time of uncertainty, confusion, and self-doubt for many students because of the change in environment and the challenge of advanced academics. In a study of the program conducted by Hailes, Quintana, and Vincent (1989), this was confirmed for all ninth graders, but the process of attending the program for four years often alters this entry-time self-doubt into a positive, achievement-oriented self-image. Their findings further showed that girls in the magnet program became more "inner- directed" the higher the grade level. The entry-level syndrome of uncertainty and intellectual doubt was alleviated somewhat if the ninth grader had previously been in a middle school magnet program and even more so if he or she had attended one of the middle school gifted magnet programs in the large urban southwestern school district.

In a study by Werner and Smith (1982) it was found that positive self-concept can be a mental insulator and promote better stress resistance over the long run for "hardier" children. For this study, it was hypothesized that this "entry-level" image is a problem for the GL throughout her four years, although decreasingly as her confidence grows and her fears about the future and doubts about her emerging gender-role within her own culture decreases. Specifically, five research questions were addressed:

(1) What life experiences had GL had that they perceive as relevant to their gender roles?

(2) What factors motivated the GL to attend a college-prep program especially designed for gifted students?

(3) To what extent, if any, did GLs experience dissonance between home gender roles and the program gender roles?

(4) What people and experiences in the program culture influenced GLs' aspirations for the future?

(5) To what extent has the dissonance persisted following high school?

To address these questions, the GLs in this study were interviewed extensively using the key informant process of the ethnographic interview. The interviews were transcribed, categorized, and analyzed by domain and taxonomy. In addition, the Attitude Toward Women Scale for Adolescents (AWSA) was administered to a random group of alumni (n=40) and to the entire student body (n=243) during the spring semester, 1995, to measure the attitudes toward gender roles in the program (see J. T. Spence, 1984 originating the AWSA, and A. Valenzuela, 1993, for studies using the AWSA with Hispanic populations in schools).

The research methodology for the first three questions, dealing with the life experiences and belief systems of the GLs and the teachers in the program, was ethnographic. In order to understand the culture of a particular segment of our society, the people must be understood. In order to understand the cultures of the GLs, the investigator must become a student of the people involved and strive to see the world through their eyes. Ethnography is the work of describing a culture. The essential core of this activity aims to understand another way of life from the native point of view

(Spradley, 1979, p. 3). In this study the ethnography methodology was divided into several steps, including gathering institutional records of the "key informants" (the GLs), observations of their "natural habitat" (the school), and analyzing it. The critical ethnographic interviews of the GLs provided the "life stories" during which accommodation and/or resistance techniques were revealed from elementary through the then-current status of each of the young women, both students and graduates of the program. The analysis of the data gathered in the above steps was divided into steps also, some of which required re-interviewing some of the GLs, when further explanations of obscure or unknown terms, situations, and/or cultural patterns were needed. The on-going and multiple analyses were divided into three types, reconstruction, domain, and taxonomic. These analyses involved describing the system relationships that the informants identified during the interviewing process. On the basis of reconstruction, domain analyses, and taxonomic analyses, certain commonalities and categories are noted by the ethnographic analysis. This is where the student informant located herself within the systems in which she operates. In other words, how did the GL operate in other systems away from the classroom, that is, in her own groups at lunch, during extra-curricular activities, at home, church, in college life, at social functions, or at parties? The ethnographer analyzed the behavior patterns, looking for differences and similarities. This is where cultural patterns of identity were detected and compared with data obtained in the earlier stages.

Part of the third research question and questions four and five investigated the culture of the school, including some of the attitudes of the other students. The AWSA, a qualitative instrument, helped to determine the nature of the culture of the school and the degree of liberal attitudes toward gender roles held by the students and graduates of the program, both male and female. The Attitude Toward Women Scale for Adolescents questionnaires were administered to the entire program population. The AWSA questionnaires for the alumni who were available were collected with the additional notations for year of graduation, ethnicity, and gender.

RESULTS

The hypothesis that attitudes toward women became more "liberal" with each progressive grade level was proven. There was no significant difference between females of different ethnic groups within each grade level. The AWSA data showed that males in the program also became more "liberal" each year, but there were significant differences between males and females at every grade level with the females being the more liberal in their attitudes.

The interviews showed that the GLs begin the program with self-identities of themselves as aspiring, smart, hardworking students. The GLs struggled to achieve their separate self-identity throughout the middle school years. The conflicts they encountered originated within their culture, with regular education females, with relatives, and sometimes with their fathers. However, they reported that they generally had the support of their families, at least in the area of education.

The results can be divided into the five main domains of the study, as they relate to the reporting and perceptions of the GLs regarding (1) home and family, (2) self and peers, (3) K-8 educational experiences, (4) high school and beyond, and (5) the culture at the high school.

The study revealed that the role of the family (Domain One) in their culture is paramount and primary. The perceptions of all of the GLs confirmed this, from how they played the roles they were assigned (or rebelled, using various resistance methods) until they graduated from high school. College years helped them to define family in different ways, as well as establishing for them the beginnings of independence, or full realization of self in some cases.

The relationship of each GL to her peers and her concept of "self" (Domain Two) was interesting in how it revealed how each was influenced positively and/or negatively by those she knew as friends and classmates. The "self" term means how she perceives herself, what she says about the kind of person she sees herself to be, and inevitably, what type of personality she believes she has and/or exhibits to others. There was never an interview question that asked "How do you perceive yourself?" or "What kind of person are you?" and so forth. Every young woman volunteered that type of information at one time or another throughout the course of the interview. Part of what we found much of the time is the same type of social and emotional characteristics that are found in many gifted students, social awkwardness, difficulty in relating to peers outside of the ability group, low self-esteem until her high-ability group membership was confirmed, low confidence in her ability level, etc. early in life. Much of this was ameliorated, however, when they discovered their "self-hood," which seemed to occur in most the the young women when they realized they were different from most other people in the family and/or school setting, academically and/or socially. What the alumni revealed in retrospect was an emergence of a competent, confident self-identity, the beginning of long term achievement-oriented aspirations, and how much attending the program facilitated the development of that self-identity.

Domain Three summarized their educational experiences prior to attending high school in the program. It appeared that all of the GLs left elementary (5th grade) with the beginning of a self-identity that had been nurtured by teachers and family, and that would grow strong in their adolescent years in the program. Interestingly, educational passages of many of the students had difficult beginnings. Many started in private or Catholic schools in a large urban

school district. Six of the fourteen started in their zoned public school, one started as an English as a Second Language student (ESL), two started in gifted programs, one in a South American country, and one in another state. By middle school they were all in public schools, and all were in honors in their zoned school or in magnet programs away from their neighborhoods. Their early years in school were generally positive; all made good grades and were treated well by their teachers and their classmates, except for two who had trouble with classmates. Middle school was a different story for almost all of the GLs. They all encountered discrimination because they were gifted or because of their being Latino.This discrimination came mostly from peers. Many of the GLs began practicing deceptions because of the strictness of their parents' controls. They were not permitted to do many of the social and some of the educational things the other students did. Most social interaction outside of their families occurred only at school. Several were even forbidden to talk on the telephone, unless it was for school reasons, a rule which was covertly violated by some of them. All of the GLs related that they were increasingly isolated from their non-gifted peers; they were not forced, but they just couldn't relate to former playmates, friends, neighbors, and relatives who were not as ambitious as they or who were "too social" for them.

Domain 4 included reflections and perceptions of the educational and social experiences in the program and beyond. At this point in their lives, their stories were so different it was difficult to generalize. Many of them came to the program because they believed it offered them a better educational opportunity for the future. Some made the choice by chance, or because they had an older sibling there. Some came to the program from a gifted middle school. For them the transition was not as difficult as it was for those who were attending a gifted program for the first time. These newcomers to gifted had come from schools where they were the smartest, the brightest, the favorite to succeed, and so on, and now for the first time they were in classes with students who were as smart and often smarter than they. Even though most of the GLs indicate there was no ethnic division and no ethnic discrimination or favoritism in the program, there was still the need to relate to some type of group of peers. Socially, the young women were looking for some sense of belonging, some social identification. Even though in the program they had found academic and intellectual peers and believed they were in excellent position to pursue their aspirations, some still had difficulty finding a group with whom they could relate. This was so

(see MOSS, page 24)

SUGGESTIONS FOR WORKING WITH GIFTED LATINA STUDENTS

- Recognize and develop their academic gifts early;
- Give responsibilities, in and out of the classroom;
- Separate academically gifted, or high achieving Latinas, from their non-achieving peers, at least by middle school;
- Visit families as early as possible and bring them into the school community, encouraging them to permit wider latitude in the social lives of their young daughters;
- Place gifted/advanced learners into a multicultural gifted program; gifted students should be in honors or equivalent classes at least by middle school;
- Select nurturing teachers and have small gifted classes;
- Diversify the student population since a multicultural student body lends the necessary support;
- Develop specialized counseling and/or awareness training for counselors, teachers, and administrators about the role of the family in Latino life.

Guidelines for Planning and Implementing a Gifted and Talented English/Spanish Dual Language Program

Rosa Milagros Higareda and Sandra Jenkins

With the approach of the millennium and the explosion of technology, schools must be prepared to offer challenging and diversified programs of instruction to the gifted minority language students so that their voices will be heard. The millennium will bring a whole new spectrum of occupations that will require not only the knowledge of more than one language but also the ability to solve unforeseen problems. The percentage of minority language students is growing at a very fast pace in the schools. By the year 2030 the Hispanic population in Texas is expected to increase by 257.6% (Center for Demographic and Socioeconomic Research and Education at Texas A & M University). Therefore, it is imperative that minority language students be given ample learning opportunities which enhance language instruction and literacy development. This endeavor can be accomplished through a gifted and talented dual language education program designed to emphasize and promote language development in English and Spanish, interdisciplinary studies, higher-level thinking skills, independent work and study skills, augmentation in creative thinking and problem solving activities. The goals of the program are for the gifted and talented minority and majority language student to become proficient in both languages, to be academically successful, to be able to understand and appreciate other cultures, and to be able to communicate in the global community. A three-year plan should be adapted in order to accomplish these goals. The plan should include research, visitations to dual language schools, training, identification, and implementation components.

"The goals of the program are for the gifted and talented minority and majority language student to become proficient in both languages, to be academically successful, to understand and appreciate other cultures, and to communicate in the global community."

In the first year of planning a gifted and talented English/Spanish dual language program, data from research should be collected from published materials, the internet, and interviews with professionals in the dual language field. Research should be evaluated on the different dual language models and their success rates.

During this year, research, planning, and preparation need to be undertaken. Information about dual language programs in school districts that have the same ethnic population as your community and have successfully implemented this program should be obtained and documented. According to the research of Collier and Lindholm, the dual language program requires a commitment to academic development of the minority language along with the majority language. The two main models to consider are the 90/10 and the 50/50. In the 90/10 model, in kindergarten and first grade, 90% of the instructional day is devoted to content instruction in Spanish and 10% to English. Thus, all content instruction occurs in Spanish and English time is used to develop oral language proficiency. Reading instruction begins in Spanish for both language minority and language majority students. At the second and third grade levels, students receive 80% of their day's instruction in Spanish and 20% in English. As in the previous grade levels, all content areas are taught in Spanish. In second grade, English time is still largely spent in developing oral language proficiency and in introducing students to English literature to develop academic English to prepare them to begin formal English reading in third grade. By fourth and fifth grade, the students' instructional time is balanced (50/50) between English and Spanish. (The language of choice depends upon the needs of the community.)

The 90/10 model requires initial emphasis of the minority language, because this language is less supported by the broader society, and thus academic uses of this language are less easily acquired outside of school. For example in Mexico, English would be taught 90% of the time and Span-

ish 10%, while in San Jose, California, and El Paso, Texas, Spanish would be taught 90% of the time and English 10%. By third grade both California and Texas students would be in a 50/50 ratio in both languages. At the secondary level, the students decide which language they would like to receive instruction in their core subjects. Research studies on this model, in both Mexico and the United States, indicate that students' success rates on standarized tests are much greater than students receiving instruction in only one language (Lindholm & Molina).

The 50/50 model can be implemented in a variety of ways. In one model, the student is taught to read in his/her home language; math is always taught in English, while social studies and science are taught in Spanish. The languages are dispersed during the day for the announcements, calendar activities, and other curricular components such as Future Problem Solving, Odyssey of the Mind, Invention Convention, and Mathcounts.

Another 50/50 model has every subject taught in both languages. Part of the day the student is taught in English using all the materials in that language, while the rest of the day the student is taught in Spanish. This material is either a continuation of the morning session or different activities using interdisciplinary curriculum for the same objectives. The schedule could be followed in several ways by alternating the languages such as morning/afternoon, every other day or every other week. The students may express their ideas and questions in whatever language they prefer, but the instructor must speak in the language of the subject or applicable day.

Information about these models should be put on a chart with pros and cons for each program (Collier, Thomas, 97). A team of teachers should visit various schools to learn first hand about their program. This team should observe both the 90/10 and 50/50 dual language models. A presentation on the combination of the research, school visitation information, and the different models of the dual language curriculum should be presented to a committee of parents, teachers, principals and representatives of the community to obtain their input and support. This group should reach a consensus about which model would be most effective for the students in their area. At this time a decision should be made on the number of schools, the grade levels, and the gifted population that should be served.

In the second year of planning, teachers should be identified and trained, student identification instruments selected, and students screened. The first step in identifying appropriate teachers would be to get a list from the personnel office of all teachers who are certified both in bilingual and gifted and talented education. Next the principal, with the campus decision making team, should select the teachers for the dual language program. The teachers are one of the major keys to the success of any program. They must not only support it but should be willing to go the "extra mile" in acquiring the necessary instructional strategies of the dual language gifted and talented education program. A professional development plan should be designed using interdisciplinary-thematic units emphasizing depth and complexity (Kaplan), Future Problem Solving, Odyssey of the Mind, Invention Convention, and other appropriate gifted and talented or dual language strategies (Tinajero and Ada).

Assessment instruments should be reviewed and evaluated to determine the appropriateness of identifying students for participation in the program (Delp). According to the *Texas State Plan for the Education of Gifted Students*, there should be a minimum of three instruments that are objective and subjective in nature administered to students. Some instruments of identification to consider would be teacher, parent, and student checklists; teacher observation forms; an achievement test; a non-verbal test such as the Raven Progressive Matrices; and an abilities test such as Structure of the Intellect (Renzulli, Delp). Students should be tested in the spring and identified for service for the following year.

Implementation of the dual language program begins in the third year with teacher and student participation. Ongoing training hours should be offered for teachers in both languages. Monthly meetings should be held for teachers to share ideas and make recommendations. An evaluation instrument should be distributed to teachers, parents, and students. Recommendations for improvements in the program should result from analysis of these evaluations and needed modifications should be implemented as soon as possible.

Dual language programs help native and non-native speakers of English speak two languages proficiently (Collier, Lindholm). This is one way schools can help students become bilingual/biliterate, life-long learners. Dual language programs should resolve some of the concerns about creating English-only learners who are then expected to suddenly become bilingual in high school and college. Research is continuing to show that biliterate learners score higher on a variety of tests (Jensen). For those truly committed to serving the gifted minority in the new millennium, these guidelines can help plan and implement a gifted and talented English/Spanish dual language program.

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the differentiating characteristic of the program.

The evaluation plan for the project is intended to satisfy two types of inquiry. The first is to address the programmatic needs of the project and of the district. The evaluation describes the status of this pilot project at different times in order to make timely corrections in its design (Provus, 1971). Later the evaluation will help determine the project's overall level of success and its readiness to be disseminated to other schools in the district. Alternatively, the district could decide on making Mesita School a type of magnet school.

Secondly, the evaluation addresses professional questions of interest. Two-way bilingual methodology represents a theoretical formulation of language learning within a socially and politically desirable context of integrated instruction. Utilizing two languages as media of instruction, furthermore, is the most current pedagogical method to develop true academic-level proficiency in each student's second language while continuing to develop her/his native language skills. To adopt both this method and the goal of bilingualism as the specific differentiating factors for a GT program is to attempt to prepare the best and brightest of the children from at least two ethnic-linguistic groups together in the hope of achieving new levels of social understanding and professional opportunity.

Thus there are many questions that flow from this configuration of methods and goals. The prospect of delivering a type of classical elementary level education in two languages (Bernal, 1998) merits a thorough evaluation. The following questions derive from the concerns of both fields—bilingual education and GT education—as well as the practical interests of the El Paso I.S.D.

1. How well are the **fluent Spanish-speaking GT students**— those who were initially LEP and those who were initially bilingual—doing in the program? How does their academic achievement in both English and Spanish compare over time to the students in the program who were initially English-monolingual? Are they acquiring English, and if so, how quickly do they reach the higher levels of proficiency? Are they losing their Spanish? At a later point in the program's development the evaluation will examine how well these students do both academically (tested in both languages) and in English and Spanish proficiency compared to other initially LEP and bilingual GT students who have been studying in the district's "regular" GT program.

2. How well are the **GT English monolinguals** doing in the program? How does their academic achievement over time compare to other English monolinguals in all-English GT programs in the district? Do the project students acquire the Spanish language over time, and if so, how quickly do they reach the higher levels of proficiency? Do the English monolingual students who entered the program at different grades (at first, second, third etc.) enjoy the same rate of Spanish acquisition, or does entry at certain grade levels seem to have an advantage? How does their academic achievement tested in Spanish compare to their academic achievement tested in English? How does their academic achievement in Spanish over time compare to that of initially LEP or bilingual GT students?

3. There is **a small number of LEP students** who were allowed into the project **who did not satisfy all of the EPISD criteria** for admission as GT students. These special students qualified on the strength of their previous academic performance after an informal, authentic assessment of their school work. How well is this group doing academically in relation to the other students in the program? Do they stay in the program in a like manner to the regularly admitted GT children? How well do they seem to be adjusting socially and psychologically to the rigors of the program? Their success could have implications for the identification procedures to be used in the future. Indeed, this study could help shape the selection of all GT students specifically for a two-way bilingual immersion program.

Students are organized by year-of-entry cohorts. Important subgroups—such as by ethnicity, gender, first language, and grade level—are studied under each cohort. The resulting panel study should detect changes in these cohorts and in the efficacy of the program with similar groups over time. Language proficiency data (IDEA), achievement data (TAAS, because it is a state-mandated yardstick, and English and Spanish versions of Terra Nova, which is a norm-referenced test that appears to have an adequate ceiling) can be used for formative evaluations in the short run as well as for summative evaluations over several years. In addition, school records of students' attendance, grades, disciplinary actions, and transfers will also be monitored, as well as teachers' anecdotal records of students' creative achievements and participation in contests or other special activities. The minutes of parent meetings are also being combed in order to detect any unanticipated programmatic effects.

Curricular descriptions are also being gathered from teachers' lesson plan books and classroom observations. Certain implementation objectives, such as meeting the 50:50 English:Spanish expectation, can be assessed in this manner. Students are often "partnered" at work tables according to their first language, so that they can work cooperatively to acquire and refine one another's native tongues. During the summer of 1999, the teachers and the instructional specialist assigned to Mesita School will work together to give more specific form to their units and lessons, especially the Spanish lessons and activities, which so far have followed the thematic, integrated format specified by the district's GT program.

Conclusion

It is vitally important that GT programs evaluate their operations, especially any innovations or "experiments" or "pilot efforts" that they may undertake with a view to making some fundamental changes in their curricula, selection

procedures, scope, or operations. El Paso I.S.D.'s Mundos Unidos/Connecting Worlds pilot project represents innovation in methods as well as in goals through a two-way bilingual immersion GT program. Its general design is of interest to GT programs that wish to serve language-minority students in a developmentally appropriate manner while they are still LEP, and to do so in a way that presents an option for parents of non-LEP GT students to learn another language to a high level of proficiency. Both the bilingual methodology and its application to GT settings are promising but unproven, however, so a rigorous evaluation of the program's planned and unplanned effects, both positive and negative, is fundamental to its immediate operational success and long-term acceptability for possible dissemination. Along the way El Paso I.S.D. hopes to make a contribution to both bilingual education and GT education.

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has inhibited rather than facilitated the type of teaching and learning available to these students. In teaching the gifted, the emphasis should be on giftedness, not on the student's status as an emergent English language learner. It is the emphasis on giftedness that has been the basis for fiscal and academic advocacy, and to deny its importance in teaching children with limited English language denies the very reason they have been identified for inclusion in a gifted program.

Teaching the English language learner who is gifted demands that the strategies outlined for teaching the gifted be applied without diminishment because a student is not proficient in English. Strategies demanded of evolving scholars and necessary for a more complex analysis of an area under study are:

- questioning or inquiry,
- developing the language of the discipline, including
  —decoding words with multiple meanings,
  —using figurative as well as technical language, and
- reinforcing the ability to perceive from different perspectives.

These strategies must be included in the learning process.

The example of the excerpt using the word *ripple* could be an opportunity to use gifted strategies by practicing these and other learning strategies associated with a differentiated curriculum. The word *ripple* was included to challenge the gifted and emergent English language learners. Ultimately, teachers and curriculum writers must resolve the educational dichotomy in which students are taught in a manner that denies their giftedness at the expense of catering to their level of English proficiency.

TEACHING TO FILL IN THE GAPS

A major complaint related to teaching students who are both gifted and emergent English language learners is that these students possess some recognized skill content deficiencies inhibiting the teaching of the traditional elements that constitute an exemplary differentiated curriculum. It is often perceived that the gifted and limited English proficient students may not have had the academic experiences that enable them to produce work necessary for the defined curricular expectations held for the gifted. Actually the students, and perhaps the teachers in some cases, need assistance to translate these experiences into those required in a differentiated curriculum of depth and complexity. With reference to the vignette, it is true that the word *ripple* meant little to some of the children. However, because it was a new word to them does not mean that it was not appropriate for the students. Rather than summarily discounting the word *ripple* and replacing it with another, the teacher drew a picture of a wavy line and described it as a ripple. The teacher then told the students that there are ripples we see and ripples we feel. That much of an introduction elicited illustrations of when and where the students personally had experienced the concept of a ripple. One student remarked, "My insides ripple when we learn new things . . . I think ripple is like being scared." Another student described how he made ripples with his fingers when he washed the dishes for his family.

Students who have made the transition from limited proficiency to fluency in English have stated that once they were identified as gifted more was expected of them even though it had not been taught to them. One student mentioned the disappointment expressed by a teacher who felt that the student would have difficulty participating in the oceanography unit because he had not been to the sea. Gifted and English language learner students need to be taught, and sometimes teachers of the gifted forget this need. The teacher has to assume the responsibility of bringing experiences to the gifted learner and providing the academic transition or bridge that is also afforded the child in the acquisition of the English language. These transitions demand using pictures, stories, and objects to simulate the experiences that act as a backdrop for learning and enable the students who are limited in experience as well as language to participate as gifted individuals. A teacher, noting that the students have no awareness of the ocean, could collect sand from the playground's sandbox, bring in some shells, play a tape of the sounds of the sea, and have the students taste salt water in order to compensate in experience and gain the knowledge and vocabulary these students need to participate fully in an oceanography unit.

There are many examples of how teachers can fill in the gaps to facilitate the participation of gifted and emergent English language learners. All of these fill-in-the-gaps activities must be identified as inherent features of an exemplary differentiated gifted curriculum and not just as good teaching practices. Too often, limited English language learners who are gifted are either excluded from the differentiated gifted curriculum because of limited experience, or the experience is given to the students in a limited manner. Referring back to the opening vignette, the teacher's comment about replacing the word *ripple* with a more common word used by children with limited English and experiences would be an illustration of teaching down rather than up to the children's recognized abilities.

Some of the fill-in-the-gaps activities that have proved advantageous to gifted and emergent English language learners include the following:

- **Sequencing information,** or presenting information and skills in a developmental order, makes it easier for students to grapple with what needs to be learned. Charting the meaning of a concept or the prerequisites necessary to acquire the skill can be instrumental in facilitating understanding and attaining mastery.
- **Clustering** is an activity that enables students to determine the connections among ideas and skills. Being able

to identify superordinate ideas and skills from subordinate ideas and skills facilitates comprehension and mastery. It also provides value for the whole and its related parts.

• **Paralleling** is a technique that encourages students to use prior concepts or skills as the leverage to acquire understanding of a new concept and mastery of a new skill. While the utilization of prior knowledge is touted as an important variable for learning, there is a difference between directly asking students what they already know about the topic and in assuming that they are applying prior knowledge without the teacher's prompts. Critical to the strategy of paralleling is helping students know what transfers or provides a key to understanding from one area of learning to another. Knowing the water cycle could serve as the impetus to understanding the concept of cycles and their application to life cycle, consumer/producer cycle, etc. An important feature of paralleling is learning the significant concepts that generalize.

• **Key words** are instrumental in helping students who are tentative start the learning process. These words are the words that can be used as prompts to facilitate asking questions, initiating research, and/or defining the task. Key words may include:

kinds	types	traits
purpose	function	attributes
value	conditions	reasons
	characteristics	

Teaching Backwards

This strategy is an imperative if we are going to appropriately teach gifted students who are emergent English language learners. It is based on the idea that we do not always have to teach sequentially, and that learning does not have to progress from simple to complex as most educators have been taught. Students are curious and eager learners who are stimulated by the unknown and the abstract, than educators previously have been led to believe.

Backwards teaching is based on the idea that students who are gifted have an innate readiness to confront the in-depth and most complex aspects of high-end learning, which focuses on abstract thinking. It assumes that readiness is a starting point, the point of entry, and that in teaching backwards, the learner is motivated by the in-depth and complex, thereby being allowed to learn more easily the fundamental facts and/or skills on which the complex learning depends. Backwards teaching is a matter of altering the starting or entry points of learning rather than having students work up to the terminal point.

For example, in a study of the the Industrial Revolution the terminal point or outcome of a differentiated curriculum emphasizing depth and complexity for gifted students is that they are able to identify the trends over time that contrib-

(see KAPLAN, page 25)

(from McLendon, page 3)

ours. This is an example of a strong core message; it's concise, yet gets to the heart of the issue.

Key talking points are the second type of message. They support the core message and are illustrated by facts, statistics, examples or anecdotes. For example, talking points for the general public might include explanations of: (a) a definition of what "gifted and talented" means, (b) falsehoods and myths about children in this population of students, (c) risks of maintaining the status quo, and (d) why additional resources are needed for g/t programs.

By using the message model recommended by Buckalew & Associates, we will have a script to guide our presentations. Also, it will help us achieve consistency in our public outreach to build trust and involvement.

Final Thoughts

We hope you will keep us informed as you observe the public relations plan in action. Over the next nine months, we would like to know about editorials and news stories in your area. We ask that you send the TAGT office newspaper clippings and dates of broadcasts concerning g/t students or gifted education programs. With all of us working to achieve the goals set forth in the Public Relations Campaign, we can succeed in our common vision for gifted and talented students—that they receive the understanding, recognition, and resources they need to reach their fullest potential.

Upcoming Public Relations Activities

- Dissemination of recommended core messages regarding g/t issues
- Blitzing legislative offices with information and meetings with legislators
- Scheduling newspaper editorial board visits and media interviews
- Issuing news releases and proposing story ideas to journalists

(from SISK, page 12)

of the seminars provided for active participation, direct experience with the topic, and group interaction. In *Recognizing the Gifts*, parents examined and discussed the characteristics and behaviors of their children's learning gifts. Gardner's (1983) seven intelligences were introduced through a personal inventory, followed by ideas for the parents to use in building the gifts. *Divergent Thinking Skills* had parents discuss how and why creativity is important for children and adults. Building blocks of creative thinking, fluency, flexibility, originality, elaboration, and evaluation were identified and discussed. In *Mind Stretching Strategies* the parents learned strategies to generate ideas and solve problems. Strategies included brain storming, imagery, mind mapping, synectics, and SCAMPER. In *Creative Thinking Styles* five creative thinking styles were introduced: being open to possibilities, breaking boundaries, seeing from a different point of view, making the familiar strange, and making connections/seeing patterns. In *Attitudes Supporting Creativity*, five attitudes that foster creative thinking were used: choices, opportunities, encouragement, modeling, and trust/respect. In the last seminar, *Questions for Kids*, the parents examined the kinds of questions children ask, the purpose of questions, and how they could ask questions that would encourage thoughtful and creative thinking in their children.

Project STEP UP was able to equip and prepare Hispanic students to be responsive to the screening and admission tests in their school's gifted programs. Concentrating on the development of special talents and skills of the children and using positive reinforcement, over 50% of the original student project population (N=243) were identified as gifted and enrolled in their local school's gifted program.

Several important principles for identification and program development emerged from a review of the projects.

As gifted students from under-represented groups such as the Hispanic population are identified and provided opportunities to participate in gifted programs, the diversity of these students' backgrounds will enrich the total district's gifted program and more adequately represent a microcosm of Texas. The equity gap is still with us in Texas' gifted programs and in many aspects of life, but as educators identify gifted and talented Hispanic students, the gap will close with societal benefits.

Emerging Principles for Developing Programs for High Potential Hispanic Students

- Focus on individual abilities; assist students to develop at their own pace the abilities they value, and to introduce and develop other abilities that will insure success for them as gifted adults in two cultures.
- In designing curriculum, the first step is to identify and plan for the individual student's strengths and plan experiences to work on the weaknesses.
- Curriculum needs to be interwoven with the definition of giftedness in the school district and the identification procedures.
- Provide an early and accelerated Spanish language and literature program, and provide Hispanic students with optimal language learning experiences through a differentiated foreign language program.
- Strong counseling and affective development is important, and cooperative learning and other noncompetitive learning strategies are beneficial since they build on the collaborative dynamics of the Hispanic culture.
- The Hispanic culture places a high value on family and personal relationships, so continued involvement of the family is essential.
- Role models and mentors are important to serve as a source of motivation, opportunities for career exploration, and as an excellent way to involve the leaders in the Hispanic community.

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whether the GL is mixed ethnicity, one from another culture, or one who had been rejected by their own culture before.

The fifth domain, the culture of the program, is probably evident after reading about the other four domains. All the the GLs found the program to be a place where they could relate, where they could belong, where they were free from being judged, where they were encouraged to be themselves, and where they saw most of the teachers as friends and/or role models. In reviewing the results of this domain, we used evidence from the interviews of the GLs, from the teachers, and the results of the AWSA. What the young women saw was their need to be separated from their non-high achieving peers, and that they had a nurturing environment in the program, with small classes, academic acceleration and questioning, freedom to pursue their own academic interests, high expectations for their going on to college, appreciation of who they were and of other cultures without concentrating on it, and warmth, friendships, and role models. It's true they felt embattled, both at home and with their other relatives, because they wouldn't access the traditional role of women in their culture and because they were perceived by others as smart and ambitious and not interested in the social concerns and activities of many of their chronological peers (or not permitted to be involved in them by their parents). In addition, they didn't believe there was a conscious attempt to indoctrinate them, but rather an appreciation of who they were, the obligation to stand up for what they believed, and a developing need to help others like themselves or like they might have been had they not developed academically.

An interesting finding was the gender role dissonance between the home and the school. Adolescence is the time that home rules are tested and modified. For most of the alumni and some of the current students (usually the first generation GLs with Mexican heritage in both groups), there was considerable dissonance, because they were under very strict parent controls with parents limiting their relationships and their activities at home and school and even assigning them chores and duties around the house because they were female. Most of the controls came from the fathers, with the mothers covertly supporting the GLs in their various resistance efforts, up to a point. However, most of the young women had relationships and participated in activities, but they did so deceptively, "handling their parents," or just lying. Those interviewees who were not first generation didn't have the same extent of dissonance between home and school.

Another finding was the difficulty the GLs had establishing their identities as achievement-oriented young women. All of the GLs experienced dissonance because they were spurned and/or rejected by their non-ability group peers. Several of the Latinas were criticized by other Latinas and excluded from their groups for not speaking Spanish, for dressing differently, for being members of a gifted program in middle school, for not attending their neighborhood schools, and so forth.

CONCLUSIONS

Considering the life stories of all of the gifted Latinas, several factors can be identified that contributed to their successes. Definite factors were identified that were common to most of the alumni supporting the middle class reference group theory of low status students expounded by So (1987). So identified the Latino middle-class reference group hypothesis, in which he contended that the best scenario for the high-achieving disadvantaged student is to identify/adopt the values of his or her own middle-class ethnic group. Because of the socioeconomic heterogeneity of the current GL students in the current study, however, some did not completely fit So's theories. Several of the GLs did have many of the characteristics that were identified in So's study as well as in Marhoun's (1990) and Cordeiro's (1993) studies. Additional factors identified and explored in this study included the Latinas' being noticed and recognized as being academically superior, although not necessarily spotlighted, which appeared to be important for success for all the GLs interviewed. This recognition appeared to be essential in order for them to be motivated to pursue academic excellence.

The findings of this study substantiate previous studies that show high-achieving Latinas need to be separated from their low achieving peers and identify with a high-achieving peer group in order to sustain achievement levels, at least by middle school. The ethnographic interviews and analyses revealed the "lifeworlds" of the GLs, showing that they usually acquire a strong sense of self-identity by fifth grade through accommodation and/or resistance to the conflicting messages they encounter. This sustains them in both their academic struggles and in the affective dissonance they experience when the home culture and the mainstream culture's values system clash in middle school and beyond.

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(from HIATT, page 9)

tarian governments. Specific countries might be selected for students to study to determine how the type of government influences various careers, the press, and the opportunities of the population. In the area of science, students might study different ecosystems. How do climate and rainfall affect, for example, living conditions, kinds of employment, governmental policies toward water usage? As students begin to study both their own and other cultures, they gain a much deeper respect and appreciation for their own heritage as well as a better understanding of the heritage of others.

But adapting services is only one part of the process of assuring that all qualified students feel welcome in a program. Parents and families must have a place in the process. Educators are well aware that some parents from other countries feel overwhelmed when confronting school authorities, particularly when their command of English is not high. If parents don't understand what services are available or don't feel comfortable asking for assistance, we are eliminating a most important component of the assessment process. The Texas Education Agency and Region One Education Service Center have developed a videotape in Spanish that explains College Board Advanced Placement programs to parents. Another video, on assessing young gifted students, currently is being developed and will be released later in 1999. These videos, presented in *telenovela* format, are an example of creating materials that target specific audiences both in language and format. Training manuals that accompany the videos are presented in a fashion that makes it possible for other parents, rather than district educators, to lead the session.

Identifying students who are speakers of other languages for advanced level services is a noble goal. But it is only part of our obligation. The more difficult part will be making parents and students feel as if these services were designed with them in mind. It is, however, critical that we accept this challenge. In the next several months, the Division for Advanced Academic Services is expanding its website to include a GT/Bilingual webpage. When it is completed, we hope to provide information about resources and campuses that might assist others in enhancing their services to meet the needs of all students who receive services for gifted students. Look for it at www.tea.state.tx.us/gted.

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uted to the onset and closure of this event. The traditional prerequisite understandings of what the Industrial Revolution is and when/where it took place are ignored initially. The students are introduces to the concepts of "trends" and "over time" and the introduction or groundwork for the assimilation of the basic facts. Teaching backwards does not omit the need for fundamental learning; it establishes the need for the basic facts. How could the students understand trends that contributed the Industrial Revolution without the facts? The traditional progression from simple to complex and the concern that gifted students earn the right to participate in more in-depth and complex learning only after they learn the basics might ensure that these students never get that high-end curriculum.

The emphasis on the identification of linguistic and culturally diverse students for gifted programs has led to successful changes in the demographics of gifted programs. Now the emphasis must be on changing the manner in which these students are taught.

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What the Research Says About Hispanic Gifted and Talented Students

Susan Johnsen

The under-representation of Hispanic youth in gifted and talented programs has spurred much of the research in this area. Scholars have primarily examined students characteristics, identification procedures, programming, teacher training, and other factors that influence student success. For this review, articles published in *Gifted Child Quarterly, Journal for the Education of the Gifted, Roeper Review, and Gifted and Talented International* during the past ten years were examined. To be included, at least 5% of the sample needed to be Hispanic. However, the sample across the articles is quite diverse. It includes Americans of Mexican, Puerto Rican, and Cuban descent, economically disadvantaged, Limited English Proficient (LEP), special education, migrant, and bilingual young children, youth, and adults from across the United States. The practitioner will therefore want to pay special attention to the qualities of the sample, generalizing the results only to groups of children in their schools with similar characteristics. This overview will examine the common themes, issues, and results across all of the articles.

Diverse gifted students appear to share traits that are common to all gifted students, such as "interest in learning," "problem solving," and "learns quickly" (Fernández, Gay, Lucky, & Gavilan, 1998; Frasier, 1991; Scott, Deuel, Jean-Francois, & Urbano, 1996). However, they may exhibit them differently in various situations. Fernández et al. (1998) found that teachers viewed musical, artistic, and kinesthetic characteristics as important to the Hispanic group, but not to the general gifted and talented population. They concluded that teachers may react to stereotypes regarding Hispanic children and tend to perceive language abilities as important characteristics of giftedness in general.

Identification procedures should emphasize a broader conception of giftedness with the use of multiple criteria and nontraditional approaches that consider the culture (Borland & Wright, 1994; Coleman & Gallagher, 1995; Frasier, 1991; Johnsen & Ryser, 1994; Passow & Frasier, 1994; Reyes, Fletcher, & Paez, 1996). Some of the recommended qualitative assessments include curriculum-based enrichment activities, classroom observations, portfolios, teacher nominations, dynamic assessment, interviews, self-identification, and community inventories. Traditional measures that appear to be used and/or successful in identifying and placing more Hispanic youngsters in gifted programs include the SAGES-P Reasoning subtest (Johnsen & Ryser, 1994), short forms of the WISC-R (Ortiz & Gonzalez, 1989), the Matrix Analogies Test (Reyes, Fletcher, & Paez, 1996), the Torrance Test of Creative Thinking (Reyes, Fletcher, & Paez, 1996; Johnsen & Ryser, 1994); and the Raven Advanced Progressive Matrices (Mills & Tissot, 1995). However, some researchers found that the factor structure of traditional instruments may vary with different groups (Masten, Morse, & Wenglar, 1995) and may not predict school performance (Mills & Tissot, 1995). Therefore, practitioners need to be cautious in using traditional instruments without a careful examination of samples and validity studies included in the technical manuals. The literature does provide some new instruments that might be helpful in identifying Hispanic youngsters, particularly those with talent in dance and music (Baum, Owen, & Oreck, 1996). Researchers also provide useful guidelines for improving policies and/or the identification of talent among minority and disadvantaged students (Borland & Wright, 1994; Coleman & Gallagher, 1995; Frasier, 1991; Passow & Frasier, 1994).

Only seven of the studies described the effects or types of programs for gifted and talented students. Johnsen and Ryser (1994) included simulations and creative problem solving in a summer enrichment program for four to seven-year-old gifted children. The New Challenge Program provided thematic, student-centered activities that focused on depth and opportunity for specialization and career exploration (Goertz, Phemister, & Bernal, 1996). This program was especially exciting because it involved practicing professionals in the community. The Skills Reinforcement Project emphasized learning skills and found that students made gains in mathematics achievement (Lynch & Mills, 1990). Other studies reported that minority students who were identified for gifted programs scored significantly higher on achievement measures (Cornell, Delcourt, Goldberg, & Bland, 1995; pursued more higher education opportunities (Smith, LeRose, & Clasen, 1991); and completed college more frequently (Griffin, 1992). Kitano and Espinosa (1995) offer some useful guidelines in working with gifted English language learners.

Using qualitative procedures, some researchers were able to identify factors that appear to influence academic success or underachievement. Along with personal or internal factors, primary external influences included the family, the school, and the community. Hébert (1996) described the importance of a strong self-concept, religious beliefs, a positive outlook on life, extracurricular programs, strong familial support, and extrafamilial support from school staff.

Significant factors that led to success included perseverance Kitano, 1998; Thorne, 1995), support of faculty in higher education (Olszewski- Kubilius & Laubscher, 1996), personal unconcern (Thorne, 1995) and attitudes toward achievement (Ogbu, 1994). Diaz (1998) as well as other researchers found that early appropriate academic experiences was the most significant factor in Hispanic students: future success.

Throughout the articles, researchers emphasized the importance of teacher training in the identification, programming, and support of Hispanic gifted and talented youngsters for example, multicultural education (Ford, Grantham, Harris III, 1996) and bilingual education (Kolesinski & Leroux, 1992). This training also needs to address the variation in the population through programming options aligned with diverse identification procedures. "The primary concern of any program must be the careful selection of teachers and the diligent construction of classes that have real meaning for the student" (Goertz, Phemister, & Bernal, p. 300).

Baum, S. M., Owen, S. V., & Oreck, B. A. (1996). Talent beyond words: Identification of potential talent in dance and music in elementary students. *Gifted Child Quarterly*, 40(2), 93-101. Fifteen third-grade classrooms from two New York City elementary schools with a substantial percentage of disadvantaged, bilingual, and special education students comprised the sample in this article. The ethnic composition was approximately 40% Black, 37% Hispanic, 21% white and 2% Asian. A Talent Identification Instrument (TII) was developed to identify children talented in music and dance. Multiple judges rated students throughout a multisession audition. Strong agreement was found among raters. Validity procedures included a factor analysis and observations of future performance. This performance instrument may be useful in discovering hidden potential in the artistic domains.

Borland, J. H., & Wright, L. (1994). Identifying young, potentially gifted, economically disadvantaged students. *Gifted Child Quarterly*, 38(4), 164-171. This article describes project Synergy, a procedure for identifying economically disadvantaged, potentially gifted kindergarten students in urban schools. The approach emphasized the development of site-appropriate methods such as multicultural curriculum-based enrichment activities, classroom observations, portfolio assessment, teacher nominations, dynamic assessment, a literature-based activity, a child interview, and the concept of best performance. It de-emphasized the use of standardized tests.

Coleman, M. R., & Gallagher, J. J. (1995). State identification policies: Gifted students from special populations. *Roeper Review*, 17(4), 268-275. The authors report the results of two studies of state policies related to the identification of gifted students from special populations. The majority of states have addressed the identification of gifted students from special populations through the development of written policies. Underrepresentation may be the result of a gap between the intent of state policies and local districts, interpretations, districts' concern about the increase in numbers of students included in the gifted program, and a lack of resources, and tenuous relationships with culturally diverse populations. A closer examination of three states, including Texas, revealed that state mandates, economic support, flexible policies, and broader educational context, i.e., association with school reform, support gifted students from special populations.

Cornell, D. G., Delcourt, M. A. B., Goldberg, M. D., & Bland, L. C. (1995). Achievement and self-concept of minority students in elementary school gifted programs. *Journal for the Education of the Gifted*, 18(2), 189-209. This study reports on the standardized achievement scores and self-concept levels of African-American, Hispanic, and white elementary school students placed in gifted or regular school programs. The sample consisted of 946 second and third grade students (595 white, 299 African-American, 52 Hispanic). Results indicated that minority students who were identified for gifted programs scored significantly higher on achievement measures than minority students placed in regular classrooms. There were no differences in academic or social self-concept, although the author questions that the use of this construct with white students may not apply to minority students.

Diaz, E. I. (1998). Perceived factors influencing the academic underachievement of talented students of Puerto Rican descent. *Gifted Child Quarterly*, 42(2), 105-122. This qualitative investigation explored the self and environmental perceptions of six talented students of Puerto Rican descent who were underachieving in an urban high school in the northeastern section of the United States. Four factors were identified as influencing underachievement: family (strained relationships, unhappy home, inappropriate parental expectations, minimal academic guidance, inconsistency), school (inappropriate early curricula experiences, non-inspiring teachers, unrewarding curriculum, questionable counseling), community (hostile environment, gangs, prejudice, few constructive entertainment options), and personal (insufficient perseverance, low self efficacy, inappropriate coping strategies). The absence of early appropriate academic experiences appeared to be a major factor in the students: future success.

Fernández, A. T., Gay, L. R., Lucky, L. F., Gavilan, M. R. (1998). Teacher perceptions of gifted Hispanic limited English proficient students. *Journal for the Education of the Gifted*, 21(3), 335-351. This study examined the relationship between teachers, ethnicities and the way they rated characteristics for gifted Hispanic LEP students and any gifted student. There were 373 teachers from Dade County Public Schools, Dade County, Florida who participated. Of this sample of teachers, 162 were Hispanic, 137 were white, and 74 were African American. Using the Sur-

vey on Characteristics of Gifted and Talented Hispanic Students (Marquez et al., 1992) and an adapted form that removed all of the characteristics that related specifically to Hispanic students, the researcher found similarities and differences in teacher perceptions. Teachers perceived the characteristics "is curious" as important across both groups; however, teachers rated "has a large vocabulary" and expresses himself/herself well orally" differently for the two groups. While teachers do not view artistic, musical, and kinesthetic abilities as important characteristics of giftedness, they view these as more favorably for gifted Hispanic LEP students. Stereotypic impressions may influence ratings of students. Some variation was found in ratings by African American and Hispanics who viewed "likes to study" and "does well in school" as more important characteristics of giftedness than whites. The authors conclude that teachers tend to perceive language abilities as important characteristics of giftedness, which may have negative implications for gifted Hispanic LEP students.

Frasier, M. M. (1991). Disadvantaged and culturally diverse gifted students. *Journal for the Education of the Gifted*, 14(3), 234-245. This article discusses what is known and unknown about the identification of disadvantaged and culturally diverse groups of gifted students. She states that accurate assessment requires data from multiple sources and nontraditional measures. Gifted students from diverse groups share traits common to all gifted students but may exhibit them differently. Frasier then shares her Talent Assessment Profile system that provides a way to collect, display, and interpret data from test and non-test sources.

Ford, D. Y., Grantham, t. C., Harris III, J. J. (1996). Multicultural gifted education: A wake up call to the profession. *Roeper Review*, 19(2), 72-79. The authors encourage professionals in gifted education to give attention to multicultural education. They recommend that teachers be trained to be more culturally aware and competent; that they be aware of their own biases, assumptions, and stereotypes; that they understand the world view from different cultures; that they try to create awareness and understanding among all students; and that they deliver more effective education to minority students.

Goertz, M. J., Phemister, L., & Bernal, E. M. (1996). The new challenge: An ethnically integrated enrichment program for gifted students. *Roeper Review*, 18(4), 298-300. This article provided information about the New Challenge Program, a Saturday morning enrichment program for gifted children at the University of Texas-Pan American. Of the students who attend the program, 55% are Hispanic and 50% are economically disadvantaged. Each class is thematic, student-centered, provides depth and opportunity for specialization and career exploration. Many of the instructors are practicing professionals in the community. Students indicated that they liked the teachers, the challenge, the interest-based courses, and being with other gifted students.

Griffin, J. B. (1992). Catching the dream for gifted children of color. *Gifted Child Quarterly*, 36(3), 126-130. This reprinted speech summarizes the work of A Better Chance, Inc. (ABC), a national academic talent search agency. This network of volunteers "scout minority communities throughout the country on a perpetual mission to find overlooked gifted children" (p. 126). They find children as they are about to enter high school and place them in public high schools in 23 affluent communities. Six to 12 youngsters live in an ABC house that is funded by the local community. Critical variables for identification and placement include a performance indicator, an admissions assessment, a candidate self-assessment, a math/science assessment, a language assessment, the SSAT Verbal Score, Quantitative Score, and Total Score. ABC graduates reported that 96% had completed or were in progress of completing a Bachelor's degree; 38% a Master's degree; and 7% a Doctor's degree.

Hébert, T. P. (1996). Portraits of resilience: The urban life experience of gifted Latino young men. *Roeper Review*, 19(2), 82- 91. The focus of this article is the life experiences of three gifted Latino young men who were students at south Central High School in a large city in the Northeast. Resilience seemed strongly connected to a strong belief in self, religious beliefs, and a positive outlook on life. All three of the young men had strong family support and extrafamilial support from a coach and a guidance counselor. All three also were involved in extra-curricular programs during the academic year and special summer enrichment opportunities on college campuses. Finally, all three had personal goals in their lives, to graduate from college and pursue a professional career.

Johnsen, S., & Ryser, G. (1994). Identification of young gifted children from lower income families. *Gifted and Talented International*, 9(2), 62-68. This study examined the relationship among measures used in the identification for a summer program of 50 gifted and talented four to seven-year-old children from lower income families. Approximately 38% were Hispanic. Identification procedures included parent nomination, teacher nomination, products, the Torrance Test of Creative Thinking, and the Screening Assessment for Gifted Elementary Students, Primary Version. The three best predictors of future achievement were the SAGES-P Reasoning, the parent checklist, and the teacher checklist. However, three years later, all of the students' scores on the ITBS dropped significantly with the identified children's scores decreasing at twice the rate as those who were not identified as gifted.

Kitano, M. (1998). Gifted Latina women. *Journal for the Education of the Gifted*, 21(2), 131-159. The researcher examined the personal characteristics that Latina women displayed during their school years to indicate high

potential, factors that contributed to these gifted women's adult achievements, and strategies used in attaining achievement. Interviews were conducted with 15 gifted Latinas who were drawn from a larger national retrospective study of 60 prominent women. The author found that more than half received average grades during the K-12 years or inconsistently displayed their academic potential. The schools formally recognized few. In spite of the lack of support encountered in school, the women had a strong determination to succeed. More than half cited discrimination as the major barrier to achievement during the adult years. The findings also revealed wide variations in patterns within the small group. She recommends that Latina students would benefit from early recognition and nurturing of abilities, the communication of high expectations for achievement, and continuous advising.

Kitano, M. K., & Espinosa, R. (1995). Language diversity and giftedness: Working with gifted English language learners. *Journal for the Education of the Gifted*, 18(3), 234-254. This article summarizes research on language diversity and giftedness, recommending these new strategies for identification: a developmental program that "evokes" a gifted student's potential; a broader conceptualization of intelligence; alternative constructs of giftedness; and assessment models developed for specific populations. In addition, English language learners tend to profit from primary language instruction during the early grades followed by a two-way bilingual program for upper level elementary gifted students. Recommended instructional strategies include student-centered approaches, emphasis on language development, valuing of students, languages in strong content courses, and collaborative learning. Family and community involvement must recognize cultural strengths and respect family resources.

Kolesinski, M. T., & Leroux, J. A. (1992). The bilingual education experience, French-English, Spanish-English: From a perspective of gifted students. *Roeper Review*, 14(4), 221-224. This article compares how French-English gifted students and Spanish-English gifted students are selected and educated in Ontario, Canada and southern Texas. The primary difference is that the goal for French-English gifted students is developing French proficiency at the expense of relevant programming, while for the Spanish-English gifted student, the goal is to develop English proficiency at the expense of the native language. Teachers need to be recruited who are fluent in two languages, are trained to use flexible teaching alternatives, and use differentiated curriculum within the framework of a respected culture.

Lynch, S., & Mills, C. J. (1990). The skills reinforcement project (SRP): An academic program for high potential minority youth. *Journal for the Education of the Gifted*, 13(4), 364-379. This study focused on providing a Skills Reinforcement Project (SRP) for 45 sixth grade students from Pasadena Unified School district who had scored in the 80-96th percentiles on the California Achievement Test. The students resembled the overall ethnic and socioeconomic composition of the school district (41% black, 26% Hispanic, and 33% other). The SRP had three phases of academic instruction, classes on Saturdays and a two-week summer residential component. The SRP Group made significantly greater gains in mathematics but not in reading. The SRP group was able to qualify for screening into the Pasadena Public Schools, program for the gifted without affirmative action.

Masten, W. G., Morse, D. T., & Wenglar, K. E. (1995). Factor structure of the WISC-R for Mexican-American students referred for intellectually gifted assessment. *Roeper Review*, 18(2), 130- 132. The authors assessed the factor structure of the WISC-R with Mexican American students referred for assessment into the gifted program. The students included 68 Mexican -American students. The authors, factor structure differed from previous research by Kaufman. They suggest that different interpretations of WISC-R scores may be needed with various samples.

Mills, C. J., & Tissot, S. L. (1995). Identifying academic potential in students from underrepresented populations: Is using the Raven Progressive Matrices a good idea? *Gifted Child Quarterly*, 39(4), 209-217. Participants in the study included all students enrolled in ninth-grade English classes in a large urban high school in New York State. The sample was composed of 347 students and included 154 Hispanic (45%) students. The students were administered the School and College Ability Test (SCAT) and the Raven Advanced Progressive Matrices (APM). The students performed well on the APM, but did not perform as well on the SCAT. The mathematics grades for students identified by the SCAT were significantly higher then those identified by the APM. The SCAT was more correlated with school grades than the APM. The authors have concerns about using the APM because of normative information and its limited relationship to school performance.

Ogbu, J. U. (1994). Understanding cultural diversity and learning. *Journal for the Education of the Gifted*, 17(4), 355- 383. This article argues that core curriculum and multicultural education do not adequately address the problem of minority groups who have not traditionally done well in the public school. The crucial issue in cultural diversity and learning is the degree of diversity between the minority cultures and the American mainstream culture. Involuntary minority students, those who were previously oppressed by the mainstream culture, may resist academic success because of their fear of "acting white" rather than "acting Chicano," and so on. The author recommends that students be taught attitudes and behaviors that lead to academic success apart from attitudes and behaviors that lead to a loss of ethnic identity. Their families need to value academic success as much as achievement in sports and enter-

tainment and encourage their children to accept responsibility for their own learning.

Olszewski-Kubilius, P., & Laubscher, L. (1996). The impact of a college-counseling program on economically disadvantaged gifted students and their subsequent college adjustment. *Roeper Review*, 18(3), 202-208. This study explored the college adjustment of a group of economically disadvantaged minority students who participated in a college and career-counseling program. Most of the students were black or Hispanic (61%). The researchers found that in the pre-college phase, economically advantaged and disadvantaged gifted students differ only slightly in their aspirations, dreams, expectations and perceptions about college. However, once at college, the economically advantaged and disadvantaged groups become more polarized with respect to the perceptions and views they hold about college and each other. The economically disadvantaged were more likely to have been employed during their freshman year, perceived a declining level of support from teachers, and had a lonely feeling on campus.

Ortiz, V. Z., & Gonzalez, A. (1989). Validation of a short form of the WISC-R test with accelerated and gifted Hispanic students. *Gifted Child Quarterly*, 33(4), 152-155. Subjects for this study were 96 students who were participating in an academic enrichment program developed and sponsored by Migrant Education in Fresno County. The WISC-R was used in this study. Results indicate that the Similarities-Vocabulary and the Picture Arrangement-Block Design dyads are potentially useful tools for screening Hispanic students. However, the authors caution school personnel to use multiple criteria in selecting Hispanic students for gifted classes.

Passow, A. H., & Frasier, M. M. (1994). Toward improving identification of talent potential among minority and disadvantaged students. *Roeper Review*, 18(3), 198-202. This article offers these ideas to guide the identification of populations that are under-identified and underserved, including Hispanics: (a) no single "theory of giftedness" exists; (b) nurturing "schoolhouse giftedness" is an integral part of any gifted program; (c) gifted behaviors appear in many different forms; (d) talents are culturally imbedded; (e) talents of minority children are not of a different order nor of a lower standard; (f) identification and cultivation of talent is integrated; (g) the sociocultural context must be taken into account; (h) it is necessary to understand the interaction of culture with environment; (i) resources and segregation have an impact; (j) it is best to err on the side of overinclusion; (k) schools need to focus on talent identification and development; (l) one should examine talent within minority groups; and (m) the model should be applicable to all students.

Reyes, E., Fletcher, R., & Paez, D. (1996). Developing local multidimensional screening procedures for identifying giftedness among Mexican American border population. *Roeper Review*, 18(3), 208-211. This article reports the results of screening procedures at two rural elementary schools located on the New Mexico-Texas-Mexico border. The ethnic composition of this school is 97% Hispanic, 2% white, non-Hispanic, and less than .5% African American. The identification process included a training of local personnel that is designed for the particular community, a multidimensional screening that included student portfolios, the Torrance Test of Creative Thinking, the Matrix Analogies Test, student self- identification, and teacher, parent, and community inventories.

Scott, M. S., Deuel, L. S., Jean-Francois, B. & Urbano, R. C. (1996). Identifying cognitively gifted ethnic minority children. *Gifted Child Quarterly*, 40(3), 147-153. A survey was sent to white, Hispanic and black parents of children in the gifted and talented program of a large urban school district. The results indicated that there were few differences among the three parent groups in the attributes that they believed were current descriptors of their gifted child. Common descriptors included "seeks information," "learns quickly," "school performance," "reading," "performs above peers," "general memory," "interest in learning," "problem solving," "communication skills," and "is aware of environment." However, more white families requested an evaluation of their child for possible placement in the gifted and talented program. The authors conclude that less referral among minority groups may result in fewer students in the gifted program.

Smith, J., LeRose, B., & Clasen, R. E. (1991). Underrepresentation of minority students in gifted programs: Yes! It matters! *Gifted Child Quarterly*, 35(2), 81-83. This article describes the Lighthouse Project in Racine Unified School District. The top-scoring 9% of each major ethnic group were identified before kindergarten as gifted and randomly assigned to either a gifted treatment or regular program. Twelve years later, not one of the 24 minority students who were included in the gifted program dropped out. Of the 67 equally able minority students who were not included in the Lighthouse Project 30 (45%) dropped out. Approximately 75% of the Milwaukee Program for the Academically Talented (PAT) Caucasians and PAT minorities planned to go to college. The authors conclude that had more minorities been admitted, more would have graduated and planned for higher education.

Thorne, Y. M. (1995). Achievement motivation in high achieving Latina women. *Roeper Review*, 18(1), 44-49. Sixty-three Latina women (43 doctoral graduates, 20 completers of doctoral courses) were selected for this investigation, which examined achievement motivation. These women were found to be intrinsically and extrinsically motivated with various internal and external psychosocial factors. Intrinsic motives of mastery, work competitiveness, and personal unconcern were associated with successful achievement. The extrinsic motive of generativity was related to

achievements in Latino and professional communities. The Latina women in this sample were less sex-role traditional in their attitudes across achievement settings. On the other hand, they demonstrated greater sex-role traditional behaviors in their homes. Professionals need to recognize the importance of family and institutional supports in meeting the goals of these women.

Susan Johnsen is Associate Dean of Scholarship and Professional Development at Baylor University. Editor of Gifted Child Today, *she was the principal investigator of Project Mustard Seed. She is author of four tests that are used in identifying gifted students: Test of Nonverbal Intelligence (TONI-2), Screening Assessment for Gifted Students (SAGES), Screening Assessment for Gifted Students—Primary Version (SAGES-P), and Test of Mathematical Abilities for Gifted Students. She is a past President of the Texas Association for the Gifted and Talented.*

(from ELAM, page 2)

We stand for children who **live** to learn . . .
and who learn to live in an ambiguous world.

We stand for children . . .
who see questions in solutions and solutions in questions,
who strive for perfection and struggle with existentialism,
who demand supreme standards of performance for themselves and others,
and who are dismayed when others do not share the same standards of performance.

We stand for children . . .
who forge ahead then dawdle,
who are one tracked then side tracked,
who concentrate for hours on their project then overlook their permission form,
who see the world in rainbows of color and judge themselves in black and white,
who have high expectations for every endeavor and low tolerance for mediocrity,
who delight in puzzles and paradoxes and are puzzles of paradoxes themselves.

We stand for children . . .
who envision a world devoid of poverty and war,
who cry with the suffering and laugh with the jubilant,
who emote empathy and exude compassion,
who fight injustice and uphold truth,
who care keenly with heart and soul,
who dedicate themselves to contributing to the world,
who work diligently to cross boundaries of thought and of action.

We stand for children who **long** to make a difference . . .
and who are shunned as different,
who are misunderstood by the public,
who are taunted by their peers,
who are deflated by their parents,
who are regulated by their schools,
who are belittled by adults,
and who are **their own worst critics**.

We stand for children
who want to be wanted and who love to be loved.

We stand for children
who are fueled by a smile of encouragement and confused by mixed messages.

We stand for children
who are compelled to be themselves . . .
individuals in a conformist society,
intellectuals in an anti-intellectual world.

We stand for children
of whom society demands performance
and from whom society deprives equity
to ensure equality.

We stand for these children who are our future,
who are the core of our being,
and who kindle our imagination,
who are our challenge for today,
and who are our opportunity for tomorrow.

Our mission is to enable them to fulfill their potential . . . and ours. Develop the gifts, enrich the future.

Have you ever gazed at our night sky and marveled at the countless stars shining above? The stars evoke a sense of wonder and hope. I see the gifted children as the stars in our sky. There are brilliant stars and fading stars, lucky stars and falling stars, rising stars and dying stars, stars we wish upon, and stars about whom we weave legends. They may look the same to an untrained eye but we have learned that each is unique. Even when we do not see them because our own star, our sun, beams above, the stars are there. No matter the time or the season, the stars shine bright . . . all over Texas. They beckon us to our cause. They inspire us to work together toward the greater achievement. They guide us on our mission.

As we face the millennium and our future, we focus on our mission and we focus on our reason for being— the gifted and talented children. To the educators, to the legislators, to the parents, and to the public, we will promote awareness of the unique social, emotional, and intellectual needs of the gifted and talented students, and we will impact the development of appropriate educational services to meet the needs of these children.

Let's reach. . . for the stars.

Q&A Answers to Your Questions

Donna Corley

In a program for bilingual gifted children, should the focus be to develop student ability in both languages equally or mainly to increase English proficiency?

The focus on one language or more than one language in programs for bilingual gifted children will depend on the philosophy of the local school district.; If the district philosophy supports dual or multiple language development, then the focus would be on developing the student's ability in more than one language. If the district philosophy supports the English language only, then the focus would be on assisting the learners to achieve proficiency in the English language as soon as possible.

To what degree is speed in learning a second language a sign of giftedness?

The speed at which a student learns a second language is the important indicator when looking for evidence of giftedness. If a child is truly gifted in language, only a minimum number of repetitions will be required as they acquire the many patterns, rules, and words. The fact that a child learns a second language, in and of itself, should not be the only thing considered, as so many other variables begin to have an effect such as age and environment.

If the Spanish language gifted program is primarily reading-based, what test(s) can be used for identification if the currently used Raven is unsuccessful in identifying students that do well in the program?

There is a promising new instrument available that was copyrighted in 1998. The Bilingual Verbal Ability Tests (BVAT) provides a verbal measure for bilingual individuals ages five-adult that can be administered in approximately 30 minutes. The test is available in 16 languages. Information regarding this instrument can be found in the Riverside1999 Assessment Catalog. It is very important to use a variety of measures when predicting possible success for a student in gifted programming. Teacher feedback, student interviews and portfolios can be very helpful.

If the state institutes assessments for gifted programs as early as grade 4, in which case there are still many students still in bilingual classrooms, will the assessments be conducted in Spanish as well as English?

If Texas institutes asssessments, they will be in the form of standards for advanced-level performances and/or products that will include exemplars and examples. The local school district will be in control of conducting assessments in any language that they choose that is appropriate to the area in which the performance and/or product relates.

In my district, like many others in Texas, there are many parents who are not native speakers of English, and while they may be able to converse well enough to communicate with a teacher, they are unable to fill out the lengthy questionnaire that is required to start the process of G/T testing. We need bilingual forms to help non-native speaking parents of G/T kids. With all the talk of schools being "inclusive," this overlooked issue needs to be addressed.

The problem in many districts seems to be that no one is available to translate either in print or in person and it is expensive to hire someone to do the translations. Another difficulty is that each district must, under Texas law, develop its own guidelines for identification and programing and this makes it necessary for the district to develop its own individual forms. Since this lack of bilingual forms is such an issue for some districts, perhaps it is time for the deveopment of a set of bilingual forms that could be used by any district that might need them.

Donna J. Corley, Ph.D., coordinates gifted programs for Conroe Independent School District. She is also a member of the TAGT Executive Board. Submit questions relating to gifted education directly to Donna Corley, 702 N. Thompson, Conroe, TX 77301, or by e-mail: dcorley@conroe.isd.tenet.edu

Product Reviews

Test of Nonverbal Intelligence-Third Edition
by Linda Brown, Rita J. Sherbenou, and Susan K. Johnsen.

The *Test of Nonverbal Intelligence-Third Edition* (TONI-3) is a norm-referenced measure of intelligence, aptitude, abstract reasoning, and problem solving that is completely free of language. The test requires no reading, writing, speaking, or listening on the part of the examinee; it is nonlanguage based. The Texas State Plan for the Education of Gifted/Talented Students (Texas Education Agency, 1996) recommends that districts use a nonverbal measure to identify students as gifted and talented who are from linguistically or culturally diverse backgrounds. Unfortunately, there is much confusion about the nature of nonverbal measures. Therefore, this review will begin with a brief explanation of measuring intelligence nonverbally, followed by a description of the TONI-3.

Language is a skill that is frequently associated with intelligent behavior. People often take in, code, classify, store, and retrieve information in a linguistic manner. Therefore, many intelligence tests have linguistic content and use language in the presentation and response formats. While language may be a requirement for performance on many tests of intelligence, it is not a requirement for intelligence itself. There are intelligent people who do not have facility with some language functions. In addition, some intelligent behaviors do not conspicuously use language or linguistic processes. However, this is only a presumption, as one can never be absolutely certain if some form of language is being used by an individual to mediate, label, organize, categorize, and manipulate information. Therefore, one cannot correctly refer to intelligence itself as being nonverbal. However, intelligence testing techniques can focus on content that appears to be nonverbal or language free, such as abstract figures and designs, and can employ administration and response formats that are also nonverbal, such as pantomiming, pointing, or manipulating objects (Brown, Sherbenou, & Johnsen, 1997).

When one begins examining nonverbal instruments, a great deal of variation is apparent in the presentation of the content, the method used to give directions to the examinee, and the response formats. Some nonverbal instruments require an examinee to read written language, while others use spoken directions. Clearly some definitions are in order. According to English and English (1958) nonverbal tests do not use words in the formulation of the test, do not require them in the solution of any of the test's tasks or problems, and do not use any apparent verbal symbols. Sax (1989) states nonverbal tests are those that "de-emphasize the role of reading" (p. 23). Finally, Hammill, Pearson, and Wiederholt (1996) state, "In nonverbal testing the goal is to minimize the role of language, not necessarily to eliminate it altogether, a task which might not even be possible" (p. 2).

The TONI-3 uses a language-free format, pantomime or gestural directions, and a nonverbal response format—the examinee points to the correct response. This accommodates the needs of individuals who do not read or write English well, due to disability or lack of exposure to the English language. The abstract/figural content of the test items ensures that each item presents a novel problem. There are no words, numbers, or familiar pictures or symbols in the TONI-3 items. This feature in combination with the elimination of language reduces the cultural loading of the test due to instruction, training, or prior information or exposure. The TONI-3 is individually administered to individuals ranging in age from 6-0 to 89-11.

The TONI-3 has two forms, each with 45 items arranged in order of increasing difficulty and takes approximately 15 minutes to administer. Raw scores are converted to percentile ranks and standard scores with a mean of 100 and a standard deviation of 15. Reliability coefficients range from .89 to .97. Exhaustive validity data are reported which document the test's relationship to other measures of intelligence, its relationship to measures of achievement and personality, its efficiency in discriminating groups effectively, and its factor structure. In addition, several bias studies were conducted to examine the degree to which the items on the test might be biased against subgroups based on gender and ethnicity. Items with bias were eliminated from the final version.

The TONI-3 is a psychometrically sound nonverbal measure that can be very useful in the identification of students as gifted and talented. It must be individually administered, a drawback for some school districts. However, the administration time is short, only 15 to 20 minutes. Some districts will want to use the TONI-3 with all students, while others may want to use it with subpopulations such as students with disabilities or those who are Limited English Proficient.

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review by Gail R. Ryser

If You Think 'Ο τι χαλον ψιλον αει', You May Need to Think Again!

Michael W. Cannon

Some things are difficult to understand. The title of this article, for instance, may pose some problems in understanding if you don't know Greek. An unfamiliar language can be an almost insurmountable barrier to meaningful communication. Even with a Greek-English dictionary, translating word for word is difficult if you aren't familiar with the verb tenses and sentence structure.

Even when we translate Euripides' phrase, 'Ο τι χαλον ψιλον αει', into English— "A thing of beauty is a joy forever" — the meaning may still be unclear. Do we know what the author had in mind? What is the context of the line? And not only the words themselves, but a lack of knowledge of the cultural milieu of ancient Athens may also hinder our understanding.

The same problems can occur in our own communications, especially those between school and home. Take a moment and look at the letters and forms that are sent to parents. While some are created for a specific event, many are used over and over again, and often a great deal of thought and planning has gone into the wording and language. These communications, especially the ones used for student identification, are carefully crafted and authors may covertly feel that each one is "a thing of beauty." But while beauty may be forever, it is a good idea to examine our forms and letters from time to time and be sure that the messages to the parents are not being unwittingly filtered in such a way that impedes understanding.

The most obvious impediment to understanding is that of language. If the parent does not fluently speak the language of the letter or form, it doesn't matter how much thought, planning, and research go into the message. Translation of letters, program announcements, and parent checklists must be one of the non-negotiables in any gifted program. Imagine having to complete your own child's parent assessment if all the directions were in Greek.

The meaning of the message may also be unclear if we fall into education-ese or the jargon of gifted education. Words that may be familiar to parents such as acceleration, enrichment, depth, differentiation, or complexity have specific meanings in gifted education, meanings that may need clarification if parents are to comprehend the sense intended.

Good intentions, in addition to their well-known use as paving stones, are notoriously unreliable in conveying important messages. The intent of the message may or may not achieve the desired end. Unfortunately, message sent does not always equal message received.

Cultural differences may be overt, but often are subtle. For example, some ethnic groups may find the gifted behavior descriptor "questions authority" to have such negative value in their culture that they may deny that it applies to their child even when it seems in evidence to the teacher.

Take a detached look at your forms, checklists, and other messages home, and apply the communications cautions listed here. Improvement is often possible, and as you revise, rewrite, and (especially) translate, remember the words of Diogenes Laertius, Μελετν το παν.*

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* (Practice makes perfect)

Call for Articles

Fall 1999

The New Millennium — Developing the Gifts, Enriching the Future

Share your ideas for developing the talents and enriching the future of gifted children in Texas. Where should gifted education be going? What can we do in next millennium for able learners? In addition, individuals who are presenting at the conference are encouraged to submit articles related to their conference presentation.

The deadline for submission of articles is **June 1, 1999.**

Winter 2000

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Developing and encouraging leadership is one of the mandates for gifted education. Articles can address issues of identification, specific programs (especially summer institutes and after school programs), female leaders, minority concerns, as well as general or theoretical discussions of the topic.

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3. Submit **three copies** of your typed, double-spaced manuscript. Use a 1 1/2 inch margin on all sides.
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Tempo

TEXAS ASSOCIATION FOR THE GIFTED AND TALENTED
Member, National Association for Gifted Children (NAGC)

Volume XIX Issue 3

A Different Approach to Creativity Enhancement

Jane Piirto
Ashland University

In 1990, when I began to write the first edition of my book, *Understanding Those Who Create*, I began it with this vignette:

It was a convention for teachers of the talented. Katherine Miller had just been hired to teach in a pullout program for fourth, fifth, and sixth grade talented students. She was glad for the opportunity, for in her undergraduate years during her student teaching experiences, she had always seemed to gravitate towards the bright students. Her new superintendent had received an announcement for the state convention for teachers of the talented, and had told Katherine that he would pay her way to go so she could learn what she was supposed to teach.

There was no written curriculum to guide her. Besides teaching the students, Katherine was to develop a curriculum. As in most states, Katherine's state did not require her to have any special training in how to teach talented children. Katherine, her superintendent said, was bright and young, and not jaded, and the school district could afford to hire her because she had no teaching experience and would come in on the lowest rung of the salary scale.

Katherine had not been taught anything about talented children in her education courses, though she had a course in the education of other special children. Before her interview, she had gone to the state university library in a town nearby to do some reading. She had memorized the categories of the talented children that the state served. Among these were "creative" children. Katherine was not sure what creativity was, and was even less sure who "creative" children were. Were they the ones who colored outside the lines? Were they the ones who looked a little weird? She stepped into the large ballroom of the hotel where the convention was being held, took a cup of coffee, and sat down to hear the first keynote speaker.

The conference organizer introduced him as one of the experts on creativity. "Oh good," Katherine thought. As he began to speak she settled in. He told a joke or two, and was a little mussed, his hair caught into a fashionable ponytail, his cowboy boots and jeans in

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From the President

Nurturing Productive Creativity

Colleen Elam

Gifted children are born with a passion for life. They are bundles of energy grasping eagerly at the world around them. As they grow, gifted children explore myriad aspects of life and living. They want to know, to partake, to participate. They actively engage life with a thirst for knowledge that seems insatiable.

How do we nurture this quest for life itself? Knowing that somewhere along the path of life, many people lose their passion for exploration, for challenge, and for pursuit, how do we nourish this propensity so that it endures for a lifetime? How do we shore it so that it is not crushed?

We can sense the exhilaration of actively living life as opposed to passively existing through life. The world glistens and beckons, offering countless adventures to explore or ignore. We have the power to experience the marvels of life, moment by moment. When we fully experience a starry summer eve or a frosty winter morn, a dry autumn breeze or a thundering spring storm, we partake in the wonder of life. When we live intensely, when we feel down to our core, we kindle a flame of passion for life. Every moment presents another opportunity.

How do we encourage gifted children to live their lives to the fullest? How do we nurture this vitality so it weaves the fabric of their lives? How do we teach them to pursue their passions into new realms of understanding?

Children are born with the ability, the sensitivity, and the intensity that are characteristic of productive creativity. We need to provide the environment to nourish children physically, intellectually, and emotionally. Through nourishment, the same passion for life and living that permeates gifted children, and radiates into productive creativity. With nurturing, children internalize a method of thinking that bolsters creativity, and they embrace an attitude that enhances productivity. Productive creativity is a tool for happiness and success in any arena of life. When we develop children's gifts, we enrich their future and ours.

Going for the Gold

Adults have to be creative to meet the challenge of developing children's gifts. One of our challenges is to channel gifted children's creativity into productivity. It comes naturally to these children to observe in depth, to comprehend at a complex level, and to view from multiple perspectives. This is the root of creative thinking. However, creative thinking is only the first step. Children must be encouraged to follow through. It is one thing to think of a great idea; it is quite another to follow through to productivity.

Our country is strong and our history is rich because so many of our forefathers had great ideas and followed through with a stal-

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The 76th Texas Legislative Session: Positive Outcomes for Gifted andTalented Students

Connie McLendon

HB 1, General Appropriations Act. Foundation School Program
Gifted education did well this session under HB 1, the General Appropriations bill, thanks to the support of Chairman Rob Junell, District 72, San Angelo. TAGT also acknowledges and thanks Representative Scott Hochberg, District 132, Houston, a member of the House Appropriations Committee, for his support of gifted education programs. State funding for gifted education in very few states equals that in Texas according to a recent survey compiled by the national organization of state directors of gifted programs. Funding of services for gifted and talented students is included as a line item in the Texas Education Agency Foundation School Program appropriation. This represents a significant commitment to the education of gifted and talented students.

During the 2000-2001 biennium, the following riders will provide another major source of state funding for gifted/talented and other advanced-learner programs. Information about the General Appropriations HB 1 riders was reported in the June *TAGT Newsletter*, along with commentary on each one.

Rider 69. Standards for Gifted and Talented Students Pilot Project
It is the intent of the Legislature that the Texas Education Agency develop an assessment system and statewide standards for gifted and talented students at all grade levels. Out of the funds appropriated in Strategy C.1.3., Improving Instruction - Operations, the Texas Education Agency shall expend $277,250 in each year of the 2000-01 biennium to begin development of such a system, and shall pilot high school exit-level standards for the performance of gifted and talented students in the areas of mathematics, science, social studies, and language arts. School district participation in the project or in the use of the standards is not mandatory. The exit-level pilot shall be completed by August, 2001.

Rider 30. Texas Advanced Placement Incentive Program
Notwithstanding appropriations otherwise made by this Act to the Foundation School Program, $2,000,000 of the appropriations made for gifted and talented education is transferred and reappropriated to the Texas Education Agency for both the pre-Advanced Placement/ International Baccalaureate activities and for the Texas Advanced Placement Incentive Program for the 2000-2001 fiscal biennium. In addition, out of the funds appropriated in Strategy B.1.1., Instructional Excellence, $8,000,000 in fiscal year 2000 and $11,000,000 in fiscal year 2001 is allocated for the Advanced Placement Incentive Program. The expenditure of such funds shall not be subject to the limitations in Rider 41, Limitations: Transfer Authority.

Rider 57. Special Foundation School Program Payments
The Texas Academy of Leadership in the Humanities is entitled to Foundation School Program (FSP) allotments for each student enrolled in the academy as if it were a school district, except that the local share applied is equal to the Beaumont ISD's local share. The same methodology shall apply to the Texas Academy of Mathematics and Science with a local share equal to Denton ISD's.

. . . And Some Legislative Outcomes Causing Concern

Rider 34. Mathcounts
Out of Foundation School Program Gifted and Talented Education Funds appropriated in A.3.3., Improving Educator Performance, the Commissioner shall set aside $200,000 in each year of the biennium for the MATHCOUNTS program. (The MATHCOUNTS appropriation is a set aside from the Gifted and Talented Foundation School Program. It is a commercially- sponsored and operated competition for approximately 2,500 middle school students in grades 7 and 8. Parents of middle school gifted children say the program does not challenge the mathematically gifted student. Over the next biennium, $400,000 will be siphoned off the Gifted and Talented Foundation School Program allotment for MATHCOUNTS. This is an increase over the current biennial set aside of $250,000.)

The Texas Governor's School
Regrettably, this twelve-year-old program did not receive line item funding for the 2000-2001 biennium. The Texas Governor's School appropriation for the biennium would have totaled $160,000, provided the sponsoring institution could raise matching funds.

Highlights of SB 4
Education became the dominant focus of the 140-day Texas Legislative Session when lawmakers decided to spend the bulk of the state's $6.4 billion surplus over the next two years on education. Big- ticket items covered in Senate Bill 4, (the $3.9 billion education finance bill) include the following: a $3,000 pay raise for teachers, librarians, counselors and school nurses; a $300 million allocation to expand full-day kindergarten and pre-kindergarten and to establish "second-chance" remedial programs for low-achieving ninth-graders; a provision that raises the share-the-wealth school finance level from $280,000 in property value per student to $295,000; help for fast-growing districts with facility construction costs; funding for the Governor's social promotion plan requiring students in grades 3, 5, and 8 to pass the TAAS before advancing to the next grade level; and some reduction in local property taxes by increasing the state's share of education funding. SB 4 also funds a number of programs passed in other bills. *(See June issue of the TAGT Newsletter for **SB 103 legislation**, which when finally approved, did not include the gifted and talented section on accountability.)*

Sunset Review of State Board of Education Rules for Gifted/Talented Education
House Bill 1, General Appropriations Act, 75th Texas Legislature, Rider 167, established a four-year sunset review for all state agency rules, including State Board of Education (SBOE) rules. The purpose of the sunset review is to ensure that the need for the rule still exists. Rules with effective dates on or after September 1, 1997, must be

(see MCLENDON, page 24)

Giftedness vs. Creativity in the Visual Arts

Ellen Winner

(Editor's Note: This is an abridgement of an article that originally appeared in the journal Poetics*)*

We often assume that childhood giftedness and creativity are one and the same. I argue here, however, that this assumption is both unwarranted and misleading. In what follows, the complex relationship between giftedness and creativity in the visual arts is analyzed.

Alexandra Nechita has just burst upon the child prodigy scene. She works in oil, on large canvases, some up to 5 feet by 9 feet, and she paints quickly and compulsively, often completing several large paintings in one week. Her paintings, which now sell for up to $80,000 apiece, are clearly imbued in the Western modernist tradition — Cubism, Fauvism, Expressionism. One can see in them the styles not only of Picasso, but also of Gorky, Kandinsky, and Miró.

> "...there is a pervasive misconception that giftedness is synonymous with creativity, and that gifted children become adult creators."

Alexandra attaches moralistic descriptions to her pictures that belie her childishness. For example, about one of her paintings which she called "Forgotten Values," she writes:

This painting portrays people who are blinded by their fame and fortune and forget about their families. . . . In the painting you can see a very clear shape, a hollowness inside the figure. He wants to go back to his family, and his family will not accept him because of what he has done.

(Nechita, 1996, p. 8)

No adult artist would talk so literally about what a painting "stands for." We see here the mind of a child, albeit a precocious one. But her paintings are startlingly adult.

Picasso's childhood works are certainly precocious; one would say gifted. They do not look like the work of an adult master, however, but rather like the work of a talented child. And they look nothing like the adult Picasso.

Picasso's early drawings are typical of what children gifted in the visual arts do, or at least they are typical of twentieth century Western gifted children. What makes Picasso's early works typical of a gifted child artist is that they show a precocious ability to draw realistically, to capture the illusion of depth, to depict contour faithfully and in one fluid line rather than in schematic formulae. Picasso prided himself on never having drawn like a child. He described a realistic drawing of Hercules which he drew at age nine in these words: ". . . It wasn't a child's drawing. It was a real drawing, representing Hercules with his club" (Richardson, 1991, p.29).

Until recently, precocious realism was assumed to distinguish the work of all artistically gifted children, and most of the preserved juvenalia of adult artists have shown this heightened realism. Of course the juvenalia preserved was by Western artists. Thus, until recently we knew nothing about the childhood work of artists from non-Western artistic traditions.

About ten years ago, the assumption that the early sign of giftedness in art was precocious realism had to be revised when the works of the Chinese painting prodigy, Wang Yani, were discovered (Zhensun & Low, 1991). Yani has exhibited her work in major museums and, like Alexandra Nechita, her paintings have been published.

Yani does not draw or paint in a realistic style, but rather in the style of classical Chinese painting. As young as four, Yani had developed a sense of the adult art world, and could make the kind of art valued by the art "field" in her culture — i.e., the art historians, the museum curators, and so forth. Yani uses the classical Chinese wash technique and paints in the loose, spontaneous, and abbreviated style of Chinese ink paintings.

Yani and Alexandra tell us not only about the power of the domain, but also about the strong role that the field plays. The term *field* refers to the gatekeepers, the judges, those curators and art critics who determine whether a work is to be valued and considered new and interesting and creative (see Bordieu, 1983; Csikszentmihaiyi, 1986 Csikszentmihalyi & Robinson, 1986). If Alexandra had somehow been able to develop her style in China, her works would almost certainly have been seen as odd, as distorted, as ugly, as unskillful, and as something to be discouraged. They would have looked nothing like the art that the adult field values. Because she painted in the West and in the 20th century, where modernism and Picasso are revered, her art looks adult-like and has thus been deemed prodigious. Had she produced her paintings two hundred years ago in the West, her works would surely have attracted the same negative reaction as they would probably get in China today.

The Relationship Between Giftedness and Creativity

The contrast between the works by Picasso as a child, and by these two painting prodigies, Yani and Alexandra, can illuminate the relationship between childhood giftedness and creativity. The contrast between these kinds of child prodigies can perhaps also help to clarify the developmental path to adult creativity.

Are the paintings by Alexandra and Yani valued because they are by children, or are they inherently creative works? If Alexandra and Yani continue as adults to paint in their respective styles, will they be recognized? It is possible that the answer to these questions differs for the two children because of the very different cultures in which they paint. In the case of Alexandra, it is likely that she will be written off as derivative unless she can develop an original style of her own. While we marvel at a ten year old who can be derivative of Picasso, we would be far less interested in an adult who can do this. This is because in the West, we celebrate novelty, and at the very core of our conception of creativity is the notion that the creator must do something novel, and thereby extend the boundaries of the domain.

Because she paints in China, where a different conception of creativity seems to exist, Yani may have an easier route to adult eminence than does Alexandra. In China, mastering of a tradition is val-

ued, rather than revolutionizing a tradition, making a new one. Thus, Yani might well continue to paint in the classical Chinese style as an adult, and be highly regarded as a creative artist. But were she to come to the West, she would face the same challenge as Alexandra: she would need to reinvent herself, to go beyond being a prodigy who can master an established tradition, and create a new tradition.

Many children with extreme gifts in some domain never go on as adults to work in their domain of talent; many become successful practitioners of their domain of gift, but never become particularly creative; and only a few go on to make major creative contributions to their domain of childhood gift. Yet there is a pervasive misconception that giftedness is synonymous with creativity, and that gifted children become adult creators.

Before proceeding further, it is necessary to introduce a distinction between three kinds of creativity, labeled here as universal creativity, gifted creativity, and domain creativity. Universal creativity characterizes the ordinary child, and has been argued to decline in middle to late childhood. Gifted creativity characterizes the gifted child. Just as universal creativity declines in late childhood years, there is evidence that creativity in a gifted artist may also show some kind of slump. Domain creativity characterizes the adult who alters a domain. Picasso and Braques altered the domain of painting when they invented cubism. James Joyce altered the domain of writing with his stream of consciousness style. No gifted child can be creative in this sense. No one would expect a child, no matter how precocious, to alter a domain, for before one can alter a domain, one must master it. There is a considerable amount of evidence that it takes a minimum of ten years of hard work to create something that leaves a domain forever altered (Gardner, 1993; Simonton, 1994).

These distinctions can help to clear up some confusion about the relationship between giftedness and creativity. There are two quite common misconceptions about this issue: (a) One misconception is the assumption that creativity is part of being gifted. While gifted children are creative, they are not domain creative; and (b) A second misconception is the assumption that gifted children become domain creative as adults. Sheer ability level cannot predict domain creativity. It is personality far more than ability level alone, that can predict who becomes domain creative.

Universal Creativity and the U-shaped Curve in Normal Children

Drawing development in ordinary children has been argued to follow a U-shaped pattern of development (Gardner, 1980; Gardner & Winner, 1982). What is meant by this is that the level of aesthetic qualities and the level of perceived creativity is seen to decline in middle childhood, only to rise again in those who go on to become artists. The drawings and paintings of very young children (i.e., between three to six years of age) are spontaneous, appealing, and surprising, and some are similar in their grace, charm, and simplicity to works produced by contemporary Western expressionists.

It appears that something in universal creativity is lost with age. With increasing skill and technical competence comes a decline in aesthetic appeal. While the preschool child's art is pre-conventional, the school-age child's art is conventional. However, this loss may be necessary and natural. It is during the school years that children master the rules of various domains, so it is not surprising that these are the years when their drawings show increasing mastery of the conventions of drawing.

While I have referred to this pattern of development as U- shaped, this is not quite accurate. For the upswing of the U occurs only in those who go on to become artists, in those who have special ability in the arts. Most children whose creativity in art declines never emerge from the literal stage.

Gifted Creativity

Children who are gifted in the visual arts do not draw at all like ordinary children. As an illustration, consider the drawings by a child called Peter, who is strikingly gifted in drawing (Winner, 1998). Peter first drew at age 10 months; typically children begin to draw around two. While his earliest drawings were scribbles, by two he was drawing perfect balloons in motion. By seven he was drawing in a very realistic fashion, often from observation. He chose complex things to draw — figures in motion, figures in noncanonical positions or in three quarters view. At six, he drew a foreshortened image of a person lying down, an unusual and challenging position even for an adult to render. And he could start his drawings from odd points, like the hem of a dress, a shoulder, or a shoe.

Characteristics of Drawings by Gifted Children

The major features that are typically seen in drawings by young gifted children that make them stand out from those by ordinary, "preconventional" children are as follows:

- **Recognizable Shapes** The earliest sign of giftedness in drawing is the ability to draw recognizable shapes one to two years in advance of the normal timetable of three to four years of age. While children typically scribble until age three or four, gifted children draw recognizable shapes by age two.
- **Detail and Specificity** Gifted children do not draw generic objects and people, but draw specific ones rich with details.
- **Depth** These children achieve the illusion of realism not only by drawing recognizable and differentiated shapes and details, but also by rendering depth. They use all the known Western techniques to show depth: foreshortening, occlusion, size diminution, modeling to show volume, and linear perspective (Milbrath, in press).
- **Mastery of an Adult Art Style** In the case of gifted children like Yani and Alexandra, who are not drawing realistically, creativity inheres in their ability to internalize and take off from the art of the adult art world in their culture. Both these children have an extraordinary mimetic ability, yet neither is just imitating. Rather, they have both in some real sense internalized a kind of style.
- **Posing Challenges** Gifted children create challenges for themselves to solve. They will start a drawing from noncanonical places (the hem of a dress, in Peter's case, the ear of a dog, as in Picasso's case) (Richardson, 1991); they will draw figures in noncanonical orientations (in three-quarters view, or drastically foreshortened). Certainly Yani and Alexandra are creating challenges for themselves, in their complex compositions full of narrative complexity.

Domain Creativity

There is no necessary connection between childhood giftedness and domain creativity. Many artistically gifted children drop out of the visual arts. Only a few go on to become domain creative.

It is extremely difficult to predict adult artistry from childhood giftedness. First of all, no child, no matter how gifted in art, will become a domain creative adult artist unless he or she can go beyond what has already been done. Child prodigies have to reinvent themselves. What they have is technical mastery and facility. They have to have more than this to make the field notice them. They must develop a style that is valued by the field. If Picasso had never gone beyond his precocious realism, he would never have been noticed, for the art world had already seen extreme realism. If one's skill is realism in an age of abstraction, one has no hope of making it. In

(see WINNER, page 18)

Farewell, Old Friend

Evelyn L. Hiatt

Usually, my article focuses on the theme that is presented throughout *Tempo*, but this will be an exception. I admit to taking great liberties and apologize in advance. At the end of the summer, Jeanette Covington, director for gifted education at the Texas Education Agency, will resign her position. It is a time of great sadness for our office, as Jeanette has been with us for over 10 years, and she will be greatly missed. However, it also is a time of great joy, for we know that she has much she wants to do outside of gifted education.

For those many people who know Jeanette, several attributes have always stood out—her professionalism, her commitment, her devotion to assuring that gifted students have opportunities to reach their extraordinary potential. But what we will miss the most is her enjoyment of life, family, and friends. In times of stress, she is a steadying force, exuding patience and calm. In times of pleasure, she joins in with gusto.

Over the past several years, the responsibilities of our division have grown considerably. In 1994, our office was the "Division for Gifted Education" and dealt almost exclusively with that topic. Since that time, however, our role has changed to cover all advanced academic services. It was important that services to gifted students not be lost in the crush of those other assignments. It was critical to emphasize gifted education as the core of what we did, and naming Jeanette the director of gifted education did much to highlight our activities in that area.

It is a very exciting time for gifted education in Texas, and Jeanette has taken a strong leadership role. As coordinator of the task force that developed the system for districts gaining "recognized" and "exemplary" status, she has made an indelible mark on the field, not just in the state but throughout the country. The importance of that work will long be remembered as elevating gifted education from merely a compliance issue to one in which educators strive and are recognized for services that are the equal to the students they serve. While this role was the most visible that Jeanette took on in recent years, it should not overshadow her other many contributions. These tasks often could be overlooked—the sympathetic listener who nurtured parents and frustrated educators through difficult decisions, the tireless advocate who stood up for gifted students both within and outside the agency, the effective public speaker who motivated all of us to do a better job.

Will Jeanette be missed? You bet she will. Will it be hard to fill her shoes? It seems impossible. But Jeanette would be the first to tell you, everyone can be replaced—professionally. While there will be another advocate at her desk, we can only hope that person will have the warmth, the charm, the optimism of our Jeanette. For, more than an office colleague, she will be missed as a friend who was always there when needed, whose loyalty was unquestioned, and whose devotion was unending. Oh yes, there'll be another strong, committed fighter for the gifted students in our state, but it may be a while before there's a boon companion like my Dorothy Jean. Farewell, old friend.

Evelyn Levsky Hiatt is associate senior director for the Division of Advanced Academic Services at the Texas Education Agency. Past-president of both the council of State Directors of Programs for the Gifted and the Texas Association for the Gifted and Talented, Ms. Hiatt serves on the governing board of the International Baccalaureate Organization and the advisory board for Advanced Placement in the Southwest Region. She is the very proud recipient of the Lifetime Advocacy Award presented by the Texas Association for the Gifted and Talented in 1998.

The Complexity of Creativity

Shirley Porter

Creativity has numerous facets that include but reach beyond the visual and performing arts, where it is most often recognized. It is a surprisingly strong and influential element adding spark, energy, and resourcefulness to all areas of life. Even though experts do not agree concerning all aspects of creativity, they do recognize that it is powerful, and Clark (1983, 30) goes so far as to state that creativity is "the highest expression of giftedness."

Recognizing Creativity

"Creativity in young children is as common as runny noses, and, yet, it is quite rare in adults." Renzulli's (Clark, 1989, 30) statement alerts us to the importance of recognizing creativity early in a child's life, even before formal education begins. It has previously been demonstrated that careful observation of children in order to identify creativity is more accurate than using tests alone. Tests are often too narrow and observation offers a far broader range of abilities and motivations (Amabile,1989); however, tests can certainly be used as supplementary information. Further studies focusing on the role of observation as a method of recognizing creative behaviors confirms the validity of this method. One study of observation led to a compilation of the most commonly recurring positive and negative traits of creativity, which vary in degree among creative people (Davis & Colangelo, 1992, 274-75).

POSITIVE TRAITS

1. aware of creativeness
2. independent
3. risk taking
4. energetic
5. having a sense of humor
6. curious
7. attracted to complexity & dialectical thinking
8. open-minded
9. artistic
10. needing privacy/alone time
11. perceptive
12. original/Imaginative

Research confirms that the negative traits often keep teachers from nominating creative students for gifted programs (Davis & Colangelo, 1992).

NEGATIVE TRAITS

1. indifferent to conventions and courtesies
2. apt to challenge rules and authority
3. rebellious, uncooperative,
4. capricious, careless, disorderly
5. absent-minded, forgetful
6. argumentative, cynical, sarcastic
7. sloppy with details and unimportant matters
8. egocentric, intolerant, tactless
9. temperamental, emotional, overactive physically and mentally

Furthermore, studies point out that people who do not understand the traits mistakenly identify strange, eccentric, or unbalanced behavior as creative. Even though extremely creative people tend to be unconforming, they also tend to be strong mentally and emotionally (Amabile 1989).

Specific personality characteristics have been shown to exist in creative people, characteristics that are easily observed. These traits include

- self-discipline about work;
- perseverance, even when frustrated;
- independence;
- tolerance for unclear situations;
- nonconformity to society's stereotypes;
- ability to wait for rewards;
- self-motivation to do excellent work; and
- a willingness to take risks. (Amabile 1986, 49)

In addition to observable behaviors and personality characteristics, it has also been suggested that biographical information be utilized when identifying an individual's creativity (Colangelo & Davis 1997, 272). For example, does the elementary child

- make or build things?
- have wide interests?
- have unusual hobbies?
- have unusual talent in art, poetry, creative writing, handicrafts, music, dance, computer programming, or a science area?
- know more about Picasso, Napoleon, Maya Angelou, or Russian cosmonauts, trains, etc. than do the teachers?
- have / had an imaginary playmate?
- have a background in theatre?

Indeed, it has been emphasized that children or adolescents who have had an imaginary playmate or a background in theater most certainly are creative (Colangelo & Davis 1997).

Beyond Characteristics

Possessing creative characteristics alone is not enough. The creative process consists of three components, all of which are necessary to produce a product. One must have knowledge, the predisposition to create, and motivation (Amabile, 1989). Irving (Amabile, 1989, p. 57) supports Amabile's model, stating that the theory of having a natural inclination or skill and never having to really work does not hold up in terms of success.

> *The so-called natural writer is just not going to get it done. At a certain level, the only thing that gets it done is doing the same thing, seven or eight hours a day, for two or three years, and getting better at it all the time.*

Renzulli (1986) also recognizes that motivation, which he refers to as task commitment, is vital. His three-ring conception of giftedness includes above average ability, task commitment, and creativity. He states that research tells us that it is from the top fifteen to twenty percent of the school population identified as having these three attributes that "we can expect to identify those persons who will ultimately engage in high levels of creative productivity" (Renzulli,

1986, 228).

Environmental Influences

Studies substantiate that some elements of creativity are inborn, some depend on learning and experience, and some depend on social environment. In schools, the environments teachers set up have a significant impact on creativity and intrinsic motivation. Storing knowledge through rote learning, or memorizing facts without knowing how the facts connect, and demanding absolute control of the environment have a negative impact (Amabile, 1989). In contrast, encouraging teachers who allow choices, reasonable physical movement, and questioning; who integrate broad thematic approaches, provide open-ended and multidisciplinary activities; who allow multimedia approaches to assignments; who allow for quiet thinking time, and who discuss multiple perspectives and provide for individualization and differentiation of the curriculum have a positive impact on creativity (Davis, 1997).

One of the major obstacles in aiding a child to develop and retain his or her creativity is to identify those areas in which the child has talent, skills, and interests that overlap. This overlapping results in a creative intersection (Amabile,1989, 89). However, this intersection is on a sliding scale, where one aspect may have dominance over another. The role of the parent and the teacher, therefore, is to help develop the skills needed, for example, when interest and talent emerge, so that the child can utilize his or her abilities in creative productivity.

Intelligence and Creativity

Most experts in the field agree that creativity and intelligence are connected in some way. Amabile (1989) refers to intelligence as talent in her model, and Renzulli (1986) describes it as above-average ability. Getzels and Jackson (1958,71-76) and Torrance (1960, 71-76) also address this connection in their research of comparative studies of intellectually gifted (high IQ) and creatively gifted students, reporting that there were no differences in the measured educational achievement of the two groups of gifted students. In fact, the results of this study revealed that:

Elementary school students identified as creatively gifted (IQ 115 - 129 and Creativity Index of 130 or higher) but not intellectually gifted (IQ 130 or above) equal or excel those who were identified as intellectually gifted but not creatively gifted as well as those who were identified as both creatively and intellectually gifted.

Thus, the concern expressed by Torrance (Torrance, 1962, 1979) for creatively gifted children who fall short of being identified as gifted according to the IQ criterion, seems to be justified. Their creative achievements in high school as well as their creative career achievements, the judged creativeness of their future career images, and their creative style of life achievements equal or excel those of their classmates identified by the IQ criterion as gifted.

In addition, Davis (Colangelo & Davis, 1997, p.271) also sees this link but views it differently and reports, "There is little doubt that intelligence and creativity are different animals, but important to the present argument, they also are related. . . high intelligence is a requisite trait for high-level creativity." Linda Silverman (1993, p.66) recognizes creativity and intelligence as being intimately connected, and those identified as gifted as well as those identified as creative are **not** "two discrete groups, but rather. . . (both) tend to be gifted."

Whether experts in the field agree or not on how creativity is linked to intelligence, it could

Role of Home Environment in Creativity

Attitudes of Parents of Highly Creative Children:

- I respect my child's opinions and encourage her/him to express them.
- I feel a child should have time to think, daydream, and even loaf.
- I let my child make many decisions for him/herself.
- My child and I have warm, intimate times together.
- I encourage my child to be curious, to explore, and question things.
- I make sure my child knows I appreciate what he or she tries or accomplishes.

—What Parents Did When Trying to Teach Their Child a Task:

- — Were warm and supportive;
- — Reacted to the child in an ego-enhancing manner;
- — Appeared to enjoy the situation;
- — Derived pleasure from being with the child;
- — Were supportive and encouraging of the child;
- — Praised the child;
- — Were able to establish a good working relationship with the child;
- — Encouraged the child;
- — Encouraged the child to proceed independently.

Attitudes of Parents of Less Creative Children

- I teach my child that punishment will find those who are bad.
- I try to keep my child away from those who have different ideas or values.
- I believe that a child should be seen and not heard.
- I feel my child is a bit of a disappointment to me.
- I do not allow my child to question my decisions.

—What Parents of Less Creative Children Did When Trying to Teach Their Child a Task

- — Tended to over-structure the tasks;
- — Tended to control the tasks;
- — Were hostile in the situation;
- — Were critical of the child; rejecting the child's ideas and suggestions;
- — Appeared ashamed of the child, lacking pride in the child;
- — Got into a power struggle with the child; parent and child competing;
- — Gave up and retreated from difficulties; failed to cope;
- — Pressured the child to work at the tasks;
- — Were impatient with the child.

(Amabile, 1989, 121-122).

(See PORTER, page 17)

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Using CPAM—*The Creative Product Analysis Matrix*

Mary Nied Phillips

Many noted researchers in the area of creativity have commented on the need for ways to effectively and fairly evaluate creative products. According to Reis and Renzulli (1991), this need is especially critical for programs serving gifted and talented students. In discussing the assessment of creative products, Reis and Renzulli review various instruments available for product and process evaluation, including Callahan's Product Evaluation Form (1980) which was specifically created to evaluate Type III Enrichment Triad Model research (Renzulli, 1977); Amabile's (1983) use of a consensual assessment technique; and Westberg's (1990) adaptation of it. This instrument, called the "Invention Evaluation Instrument," judged the creative productivity of student inventors using a factor analysis stressing three items: originality, technical excellence, and aesthetic appeal.

> "It is the imaginative use of knowledge that is essential for actual, creative productivity."
>
> *Sidney J. Parnes*

However, statistical factor analysis is not an evaluation tool normally available to or used by classroom teachers doing Type III Enrichment Triad activities with their students. During the past school year, for example, my third through sixth grade gifted students completed a wide variety of Type III activities, including a display, a scientific illustration, an audiotaped radio program, a videotaped science news report, an invention, and a portfolio of original art, along with a computer simulated mission based on the NASA NEAR program. Each of these projects, some individually completed and others done in small groups, was based on the guidelines of an authentic national or international program that would assess the students' work in comparison with that of their peer group. Each program, however, has its own set of evaluative criteria.

In the regional judging of the Crayola Dream-Makers program, for instance, based on the theme, Millennium Traveler, the work of 14 young students submitted from my campus will be evaluated by a jury of art professionals and professors at Baylor University. Their goal is to select 40 pieces from the many thousands of K-Grade 6 entries in a five state area, assessing each work on the basis of 1) visual appeal, 2) originality, 3) age appropriateness, 4) craftsmanship, and 5) the written Dream Statement accompanying each artwork, and its relationship to the art.

The national Craftsman/National Science Teachers Association's Young Inventors Awards Program for grades 3-8 requires each student entry to consist of an inventor's log, photograph of the student inventor using the tool, and diagram. A panel of science specialists and educators will select the inventions of 12 national finalists and 24 second and third place regional winners, all based on the following criteria: 30% functionality of the tool, 40% creativity, and 30% clarity of communication in written format.

As Kingore (1998) states, problem solving performance tasks, such as the ones above, can provide many significant learning opportunities for the gifted and talented child and actively promote higher-level thinking.

As students become producers, they are challenged and engaged, both mentally and physically. But with so many different products and programs done this year, my dilemma as facilitator and coach was how to establish a way for both students and teacher to evaluate all types of products consistently, both in individual and collaborative situations.

Obviously, we could use the criteria established in each and every competition, and we did. I still felt the need, however, to find or create a standardized evaluation that would cut across project lines and allow for a better comparison of student efforts.

In reviewing various resources on creativity, another model of creative productivity surfaced, that belonging to Besemer and Treffinger (1981), who set out to review the existing literature on the criteria by which creative products and creative ability are evaluated. First identifying over 125 proposed criteria, Besemer and Treffinger went on to develop a theory summarizing their research. This theory led to their devising an evaluative model called CPAM or the Creative Product Analysis Matrix.

In CPAM, Besemer and Treffinger grouped related attributes used for creative evaluation and found among the varying words and phrases three general categories. These they viewed as different but interrelated dimensions: 1) novelty; 2) resolution; and 3) elaboration and synthesis. Each dimension, in turn, was seen as composed of two or more distinctive attributes or sub-scales (Dacey, 1989). According to Reis and Renzulli (1991), 12 subscales were developed from the original 110 adjectives studied; Dacey cites eleven.

These subscales were further studied by Besemer and O'Quin in two separate but related efforts (1986, 1987) as a way to confirm the initial CPAM theory. The result, after elimination of ambiguous and/or overly negative adjectives, was the current model (see Figure 1) composed of three categories and eleven subcategories.

CPAM criterion ratings for creative products can be given by an evaluator on one of three possible levels for each of the 11 criteria: low, medium, or high. Besemer and Treffinger determined that it was not necessary for a product to excel (that is, be rated at the HIGH level) on all criteria.

One of my third graders' inventions, the Burger Buddy, consisted of a modified pair of long-handled tongs that were given the addition of two spatulas, hot glued to the tongs' ends. Using the CPAM instrument, the student's Burger Buddy evaluation, done by classroom peers, teacher, and young inventor after a lesson on the criterion ratings and their meanings, might look like the chart in Figure 2.

(see PHILLIPS, page 19)

Moving Beyond the Creative Thinking Skills

Joyce Juntune

A review of gifted programs and practices points out our commitment to the teaching of creative thinking. Almost every program includes services such as Odyssey of the Mind teams, Future Problem Solving teams, and participation in Invention Conventions. Resource room and extension activities are often designed around the common creative thinking skills of fluency (the generation of many ideas), flexibility (the generation of different kinds of ideas), originality (the generation of unusual ideas), and elaboration (adding details to ideas to bring clarity) (Juntune, 1990). Many of the units teachers write for gifted students use a number of the eighteen teaching strategies for thinking and feeling developed by Frank Williams as a guide for designing the process part of the unit (Maker & Nielson, 1996). These eighteen strategies include familiar strategies such as attribute listing and analogies, as well as the less familiar strategies of examples of habit and the study of creative people and process (Williams, 1986).

While these activities and strategies are important components of a gifted program, they lull us into believing that as long as we provide creative thinking experiences to all students we are adequately meeting the needs of our creatively gifted students. There is a difference between the teaching of creative thinking skills and developing the potential of the creatively gifted.

> "Creative people are visualizers and daydreamers. . . (who) use their imagination to see order where others see chaos. . . interrelated ideas where others see isolated ideas."

An examination of the research and writings in the area of creativity can help us understand what it means to be a creative person, as well as suggest ways to modify our programs to serve our creatively gifted students. It is true that the teaching of creative process skills will help people become more creative in their thinking and approach to problems (Csikszentmihalyi, 1990; Juntune, 1979), but skills alone do not define a creative person. Most of the literature describes creativity as a collection of personality traits and characteristics rather than a competence in creative thinking skills.

Creative people are described as individuals who are independent, have a low need for conformity, and whose ideas often appear unconventional (Barron, 1995; Getzels & Csikszentmihalyi, 1976). They have a strong internal drive (Amabile, 1983; Ghiselin, 1952; Piirto, 1998) and experience great freedom and joy through immersing themselves in a topic or problem for hours and days (Bloom, 1985; Piirto, 1998). Sometimes they totally lose track of time and are surprised to find they have missed a meal or an important appointment (Csikszentmihalyi, 1996). Torrance (1995) describes this as "having a passionate love for something" or the "ability to fall in love with something" (p. 129). He lists this as a key characteristic of a creative person.

Creative people find they are more creative when they have long periods of time for independent work and will bypass group activities for the opportunity to work alone (Barron, 1995; Ghiselin, 1952). Piirto (1998) found that the times of solitude brought an inner harmony. This seems to closely align with the strong case Amabile (1983) makes for the role of internal motivation which was mentioned earlier.

> *Intrinsic motivation is conducive to creativity, but extrinsic motivation is detrimental. It appears that when people are primarily motivated to do some creative activity by their own interest in and enjoyment of that activity, they may be more creative than when primarily motivated by some goal imposed on them by others* (p. 15).

Another trait described by several researchers relates to the way a creative person views the world. Piirto (1998) describes it as a freshness, a sense of newness, "seeing things many times but always seeing it like a first time" (p. 52). Others refer to this trait as an openness to experience the world around one (Barron, 1995; Getzels & Csikszentmihalyi, 1976), to be curious, to ask questions, to wonder and delight in the details of each leaf or each building (Csikszentmihalyi, 1996).

Creative people are visualizers and daydreamers. They are able to use their imagination to see order where others see chaos. They see interrelated ideas where others see isolated ideas. The creative person intertwines ideas, thoughts and actions that to most people appear segregated (Barron, 1995; Csikszentmihalyi, 1996; Piirto, 1998).

Seeing relationships that others do not also requires creative people to have courage and fortitude. Torrance (1995) calls it the "minority of one" experience (p.121). He reminds us that creativity involves being different, stepping into uncharted waters, making honest mistakes, testing known limits, and responding to challenge. All of these take an immense amount of courage.

Csikszentmihalyi (1996) describes the personality of creative people as complex because they often exhibit a paradoxical expression of opposites. "The creative person brings together the entire range of human possibilities within themselves. Instead of an individual, we have a multitude" (p.57). The creative person has the ability to quickly move from one extreme to the other. Creative people can be energetic and laid back, focused and listless, disciplined and playful, wholistic and detailed, all the while jumping between fantasy and reality. It is not surprising that Koestler (1988) defines creativity as "a learning process where teacher and student are located in the same individual" (p.269).

Understanding the creative person is one piece of the task. We must also understand the process of creativity and learn to fit what we have come to embrace as creativity into a larger plan for devel-

oping our creatively gifted students. In the mid 1920's, Wallas (1926) attempted to define the mental process used by creative people. The process he defined as the Wallas Paradigm has four stages:

- **preparation** — the investigation stage, the gathering of information, the stage of indepth study;
- **incubation** — the time of arranging and rearranging ideas, letting the ideas simmer, a time of living with ambiguity;
- **illumination** — the realization of a solution, the A-HA, a time of sudden insight); and
- **verification** — a time of evaluation, deciding if the solution or insight has worth).

Czikszentmhalyi (1996) termed this fourth stage **evaluation** and added a fifth stage. He called the fifth stage **elaboration**. In this stage one adds the details to make the idea or solution interesting and understandable. Czikszentmhalyi suggests this stage is probably the hardest and requires the most energy. He likens this to the 99 percent stage from the comment attributed to Edison that creativity is one percent inspiration and 99 percent perspiration. Though the process appears linear, it is actually cyclical. A person may return to parts of the process again and again during the creation of an idea or product.

To make the creative process work internally, students need more than the ability to generate a large number of ideas. They need in-depth knowledge of the field or domain which matches their interest and talent. They also need to develop a high level of proficiency in using the tools and techniques of the domain. This lays the foundation for the preparation stage of the creative process. For creativity to occur, the mind must be stretched to its limits voluntarily (Csikszentmihalyi, 1996).

During the third verification/evaluation stage of the creative process, students need to bring together a highly tuned intuition and skilled judgment. The generation of new and unusual ideas is not the issue; but the intuition and good judgment to know which of the ideas generated are worth pursuing. Czikszentmhalyi (1996) quotes a creative scientist who credits success to such a combination, "whereas most scholars have ideas which do not pan out more than, say, 4 percent of the time, mine come through maybe 80 percent of the time" (p. 61).

One technique that is mentioned consistently throughout the literature on creativity is the importance of keeping a notebook or journal of one's thoughts and ideas (Csikszentmihalyi, 1996; Piirto, 1998). The value of this is supported through the study of the lives of creative people across the disciplines. Note-taking allows a person to take down incomplete thoughts that can be strung together with similar thoughts at a later date.

> *The stream of ideas flows continuously during all our waking hours, and along this stream priceless ideas are passing. The thing to do is to try to catch them as they go by. We should make a rough note of every idea just as soon as it occurs to us, regardless of where we are (Osborn, 1993, p. 325).*

This expanded view of creativity has several implications for gifted programs. Though the descriptions of our gifted programs include the creatively gifted, in reality, most gifted programs are designed to challenge the academically able student. It is often assumed that somehow the creatively gifted are also served by exposing students to a variety of activities using higher level thinking processes. As the literature points out, the creatively gifted need the encouragement and the environment to develop the personality characteristics that will serve them as creative adults, not just the process skills.

Gifted programs must also re-examine how they find the creatively gifted students among their student population. High performance on a cognitive abilities or standardized achievement test does not translate into a student with a high creativity potential. The correlation ends at an IQ level of 120 (Csikszentmihalyi, 1996; Piirto, 1998). Gardner (1993) puts it this way:

> *First, creativity is not the same as intelligence. While these two traits are correlated, an individual may be far more creative that he or she is intelligent, or far more intelligent than creative. Moreover, when talented individuals are examined, it is clear that psychometric creativity is independent*

(SEE JUNTUNE, page 17)

District Responsibilities to the Creatively Gifted

1. A re-examination of identification procedures. The elements related to creativity must uncover students exhibiting the characteristics associated with creativity, not just students testing high on a creativity test. An expectation of a high cognitive ability score AND a high creativity score is unfair to both the highly creative student and the academically gifted student.

2. A development of program services that allow for different opportunities for the academically gifted and the highly creative. Highly creative students need chunks of time to work alone on issues and problems of high interest to them. Sometimes the highly creative student needs the time to ponder an idea while the academically gifted student needs to move on and cover a larger amount of content.

3. The finding of teachers who understand the highly creative and are able to live with their need for ambiguity, their inability to follow the straight predictable path, and their intense passion and curiosity which can derail a lesson with no warning. Teachers of the highly creative student must resist putting their creativity on the classroom stage in favor of strengthening the personality traits and characteristics embodied within the creatively gifted student.

Figure 1

Creativity is as Creativity Does

James Collett

My Mama always says, "Stupid is as stupid does."—Forrest Gump

At times, great wisdom emerges from the most improbable sources. The aphorisms of Forrest Gump often read like Zen koans, shrouding truth within incongruity. A koan is a short anecdote or statement that expresses some aspect of enlightenment, often in an unintelligible, paradoxical manner. For example: "The harder you try, the less you know; beware lest you lose the substance by grasping at the shadow." Forrest plays the archetypal "great fool," wise beyond understanding (Nisker, 1990). The great fool, in his innocence, wonders about the obvious, stands in awe of the ordinary, and stumbles into revolutionary discoveries.

Only the foolish would attempt to package creativity. Yet, the great fool may help us find a way to achieve it. If we paraphrase the words of Forrest Gump's mama, we touch upon a truth that can aid in the search for creativity. We find the creative spirit in creative action. Creativity is as creativity does.

> "Imagination is more important than knowledge."
>
> *Albert Einstein*

Creativity is generally defined as the ability to produce or bring into being some new thing, activity, course of action, or way of thinking by using imaginative skill rather than imitation. Theorists arguing nuances of definition and researchers dissecting various origins of creativity can prove fascinating to study, yet provide little help in developing creativity within students. For the teacher, the central question remains, "Can creativity be cultivated? Through the program provided, through the leadership exhibited, through the inspiration engendered, will more creative individuals emerge?"

I believe the answer is yes. Creativity can be nurtured. The issue then becomes, how is this task accomplished? How does one ignite the creative potential within learners? We cannot simply copy creative products. That becomes imitation, not originality. Rather, we must attempt to discern and instill the creative process—the "how one does it."

Perhaps the best place to begin to understand the "how" of creativity is the study of creative individuals. If we distill the essence of what they do, we may learn something about the nature of creativity. We can expect to find only general directions, not a well-beaten path. Creativity, by its nature, means actions and results that include the unpredictable, the unimagined, the unusual. We must be careful not to corrupt the lessons we learn.

Michael Michalko, a creativity consultant, studied a number of creative people, all of whom earned the label "genius." (Michalko, 1998). He studied a number of these individuals throughout history from science, art, and industry, seeking common patterns. Michalko first determined that the genius thinks "productively," rather than "reproductively."

Reproductive thinking operates on the basis of precedent, considering similar problems encountered in the past. While thinking through the prism of past experience provides a rich array of materials, it does not lead to originality. The old axiom applies, "If you always think the way you've always thought . . .".

By contrast, geniuses think "productively" when confronting a problem. They ask, "How many different ways can I look at this? How can I rethink this?" Michalko argues geniuses operate according to Darwin's theory of biological evolution. Like nature, they create many possibilities through blind trial and error and then let natural selection decide what solution survives. The critical feature is "the unpredictable generation of a rich diversity of alternatives and conjectures." (Michalko, 1998). From this variety, the best ideas survive for further development and communication.

Michalko found that in terms of productive thinking strategies, geniuses:

- look at problems in many different ways;
- make their thoughts visible;
- produce;
- make novel contributions;
- force relationships;
- think in opposites;
- think metaphorically; and
- prepare themselves for chance.

If we know, therefore, that creative geniuses function in this manner, then we can logically assume that, if we act in like manner, while we may not become geniuses, we will become more creative. Genius is as genius does?

If teachers seriously desire to have more creative students, they must first seek more creativity in themselves. They must understand the nature of the creative process and apply this knowledge to three critical areas: their instruction to students, the classroom activities in which students engage, and the products they require of students.

For the teacher, a new question emerges, "How exactly do I achieve this? Fine words—think like a genius—easy to say; not so easy to accomplish." In addition, while the key to success lies in applying the process, the ultimate measure of a program's success resides among the products—the "what one can do". In an age of quantification, scores must be assigned, points totaled, results evaluated. To know creativity is not enough. The creative teacher must also nurture creative actions to stimulate creative production.

While the nature of creativity itself prohibits the development of specific templates (the term "creativity notebook" seems an oxymoron), I do believe I can suggest five keys for unlocking greater creativity. Bear in mind they provide the techniques. Like chess rules, they are short and general. Learning them is relatively simple. However, also like chess, mastering them requires extensive work and constant effort.

Play

An excellent place to search for creativity is in the world of business, where the challenge is far from esoteric. If companies and executives do not find creative solutions to their problems, they face extinction. Several interesting individuals have directed their efforts toward this audience.

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One writer from this field widely known to educators is Edward De Bono. De Bono developed the "Six Thinking Hats" strategy for business (De Bono, 1985). He created the six hats to provide a mechanism for "deliberate thinking." Each hat focuses on a different type of thinking, allowing for clearer focus and communication among participants in a group. When deliberating, each speaker would clearly express him or herself by donning (at times literally) the appropriate hat:

- The **White Hat** wearer concentrates on objective facts and figures.
- A **Red Hat** speaker expresses the emotion generated by the discussion.
- **Black Hats** always lead the speakers to cover the negative aspects of the issue.
- To put on the **Yellow Hat**, one must seek the most optimistic and positive thinking possible.
- **Green Hats** fertilize creativity and new ideas.
- Those who wear the **Blue Hats** look at the thinking itself, organizing the process for optimum results.

De Bono's goal was to help business managers turn their "intentions" into "performance" (De Bono, 1985). He provided business (and educators) with a clever tool for developing more focused thought. Many teachers have applied De Bono's Hats directly to the classroom. This tool is an excellent example of bringing creative procedures to classroom operation. Students correctly using the Six Hats will think in a more complex manner and increase the potential for better thoughts.

Two important points to note. First, De Bono stresses the importance of play-acting. Play is important to the creative process. John Cleese said, "The essence of creativity is not the possession of some special talent, it is much more the ability to play." Nietzsche said, "In every real man a child is hidden that wants to play." Play is the central human learning structure (Gelb, 1994). In play, children learn rapidly, adjusting knowledge and skill almost without thought. Play is more fun and failure at play less devastating.

Secondly, as we play, we become that at which we play. De Bono contends, "If you go through the motions of being a thinker—for example, putting on your thinking hat—then eventually you will become a thinker. Your thinking will follow the motions. Your play-acting will become real" (De Bono, 1985). Heraclitus reminds us, "We are most nearly ourselves when we achieve the seriousness of the child at play" (Gelb, 1994). We are more creative when we play. If you would be more creative, play at it.

Draw

Geniuses make their thoughts visible. The notes of Leonardo Da Vinci, exhibit a fascinating blend of word and image. Text and sketches flow together, enhancing one another. Similar patterns appear in the notes of Isaac Newton, Albert Einstein, and Vincent Van Gogh. The use of sketches, patterns, lines, and drawings in formulating notes stimulates greater creativity and strengthens recall.

Tony Buzan has developed an amazing device for producing visible thought—mind mapping (Buzan, 1993). Buzan bases his idea upon "radiant thinking." Radiant thinking refers to associative thought processes that proceed from or connect to a central point. In *The Mind Map Book*, Buzan elaborates on basic mind mapping techniques. The "rules" he suggests using build an organic pattern, flowing from some central thought. Lines, color, symbols, and drawings all allow for notes that better match mental patterns than do traditional, linear ones.

Teachers can use mind mapping to organize their materials and presentations. For example, I mind map a unit before I begin it. I can see the entire unit on a single sheet of paper. I can consider how the different components fit the main theme and relate to one another. I can track my progress and make adjustments more quickly. Finally, the map helps me recall the unit's components, as well as viewing it in a more holistic manner.

Students can employ mind mapping as an organizing tool for their own knowledge. They can map materials studied in class, from textbook chapters to magazine articles to entire books. Class notes can be mapped. Maps of projects allow for easier assessment of progress and time management. Finally, mapping itself encourages the novel combinations, forced relationships, and thinking in opposites that Michalko found inherent in thinking among geniuses. If you wish to see more creative thought, draw it out.

Question

When they encounter a problem, creative geniuses use their knowledge as a springboard and they employ questions as the central vehicle for that thought. Questions are one of the most obvious and least utilized tools for creative thought. Teachers, of course, ask questions constantly. Far too often, they are not the best questions.

In *The Ascent of Science*, Jacob Brownowski asserts, "Einstein was a man who could ask immensely simple questions" (Nisker, 1990). He asked the key questions—those that take time to ponder, that get at the heart of the matter. His musings on the nature of time, a series of "what if . . ." questions that led to fascinating images of the universe, provide the classic example.

Teachers should allow questions to drive classroom actions, from a daily activity to entire areas of study. True key questions require some thought. They are both the most obvious and the least obvious ones. Lessons and activities should be built after the questions are developed. These questions remain the focus, opening the discussions and the possibilities.

More importantly, teachers should teach students how to ask questions. Students should have an entire repertoire of question types and levels. They should learn how to formulate questions that change the nature of the inquiry, that open new lines of thought, that challenge their assumptions. Whenever possible, student initiated questions should set the course of study. Yet they must be the best questions possible.

Fermi questions provide good exercise in developing and pursuing questions. This question type is named after Enrico Fermi, the Italian physicist who contributed to the development of nuclear physics and quantum theory. Fermi had legendary skill in figuring out things in his head, using information that originally seemed too meager to arrive at a quantitative result. He would consider each value with a "zeroing in" technique by determining the value in question was larger than some number and less than some other amount. He would proceed through each step in this manner until he reached a quantified answer within specifically identified limits.

A Fermi question, such as "How many pianos are tuned in New York City each week?," requires estimation of physical quantities to arrive at an answer. The question is posed with limited information and require students to ask many more questions (How many pianos are there in the city? How frequently are they tuned? How many tuners are there? How many pianos can they tune each day, etc.). Fermi questions utilize estimation, often at the edge of the individual or group knowledge. They can be used as springboard for research and inquiry. To reach a group answer, the members must communicate and develop consensus. No single "right"

answer emerges. Rather, the emphasis is upon process, upon how the answer was reached.

In any classroom, question framing should be the work of students as much as of teachers. The answers one gets are only as good as the questions one asks. If we want more creative answers, we must learn to ask better questions.

Meditate

Creativity, originality, novelty, and innovation all involve special habits of mind. To develop them, one must study them and work to recognize them in others and within oneself. The dictionary defines meditation as "the act of engaging in continuous and contemplative thought." To develop creativity requires meditation.

Begin with the process modeled in this article. Read *Thinkertoys* (Michalko, 1991), *If It Ain't Broke. . .Break It!* (Kriegel, 1991), and *Lateral Thinking* (De Bono, 1970). Examine their strategies and their philosophies. Meditate upon them. Make lists. Post them. Refer to them in planning and in the midst of actions. Perhaps a dose of Zen could also provide inspiration. Dip into *The Little Zen Companion* (Schiller, 1994) or *Zen to Go* (Winokur, 1990) or read that classic of forced relationships, *Zen and the Art of Motorcycle Maintenance* (Pirsig, 1974).

Next, practice metacognition, or reflection upon one's own thinking. Evaluate your thoughts carefully, considering when they were creative and what happened to make them so. Examine frequency of traits. Reflect upon situations where creativity seemed particularly absent. Determine what mental actions occurred or did not occur.

Thirdly, encourage meditation among students. Constantly seek to know, and have them know, what they thought and why they thought as they did. Plan time for meditation of course material, of class activities, of projects developed. Unless students understand how they produce creative results, they will never develop a consistent creativity.

Develop reflective minds. Reflect constantly, sometimes immediately, sometimes over extended periods of time. Reflect openly. Reflect only within. Reflect in different forms. Reflect with different groups. Reflect. Reflect. Reflect. "The mind of the perfect man is like a mirror."

Emulate

Finally, paradoxically, to be creative, imitate those whom you most admire for their creativity. Read books on thinking and creativity, not so much for the "worksheets" on creativity (another oxymoron), as for their ideas on strategy and tactics. "Do not seek to follow in the footsteps of the men of old; seek what they sought."

A fascinating book by Michael J. Gelb (1998) offers a superb emulation model. Gelb examined the life of Leonardo da Vinci for the principles that formed the central essence of his genius. He developed a list of seven Da Vincian Principles. Gelb makes no claim you will become another Da Vinci, no more than studying the golf of Jack Nicklaus makes one a world-class golfer. However, if we choose to study the best role models available, they will "guide and inspire us toward the realization of our potential" (Gelb, 1998). Gelb formulates these seven principles in Italian:

- *Curiosita*—An insatiably curious approach to life and an unrelenting quest for continuous learning.
- *Dimonstrazione*—A commitment to test knowledge through experience, persistence, and a willingness to learn from mistakes.
- *Sensazione*—The continual refinement of the senses, especially sight, as the means to enliven experience.
- *Sfumato* (literally "Going up in smoke")—A willingness to embrace ambiguity, paradox, and uncertainty.
- *Arte/Scienza*—The development of the balance between science and art, logic and imagination.
- *Corporalita*—The cultivation of grace, ambidexterity, fitness, and poise.
- *Connessione*—A recognition of and appreciation for the interconnectedness of all things and phenomena.

Gelb elaborates each principle with material from Leonardo's notebooks and works. He offers questions for meditation and self-assessment. Then he provides a program of practical activities for cultivating that principle. Gelb's design is "to bring the spirit of the maestro to your daily life" (1998).

Gelb's book is one example of a program of emulation. It provides an excellent plan to follow. The important point is not that one must follow this particular plan. Rather, the goal is to bring the spirit of emulation to daily life. Like Stephen Covey's Seven Habits (1989), such lists prove only interesting novelties unless one makes them a consistently practiced reality. Do not copy the master's works of art, but emulate the art of his or her work. Emulation is not the goal, mastery is. Follow a master as apprentice until you choose to set out as your own master.

While thought and reflection upon creativity are important, the paths to creativity can be found only by traveling them. Perhaps creative genius is more a hologram than a set of steps. Attempting any part of it is to touch all of it. We cannot wait until we are more creative. Like juggling, we must stretch ourselves beyond our perceived level of competence to accelerate our development of competence (Gelb, 1994). We need to keep a beginner's mind, playing with the possibilities. We will learn more that way. As that Zen master of physics Einstein reminds us, "Imagination is more important than knowledge" (Winokur, 1990).

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(from ELAM, page 2)

wart work ethic. We would not be where we are today had those ancestors thought great thoughts, and then went home to play whist. To be successful, to transform society, to contribute to the world, children must be both thinkers and producers. The following through to productivity is what breeds success. Adults must model a work ethic and teach children that what we do, we do all the way. One of the greatest joys is the reward of accomplishment, the feeling of elation experienced after something personally well done.

Young children want to please adults they care about. They are open to guidance, and they flourish when nurtured. When adults begin encouraging productive creativity at an early age, it becomes the *modus operandi* for children.

Encouraging Courage

To be different demands personal risk and therefore requires courage and strength. Children must develop an inner resilience to repel scorn. They must learn to bounce back, or they will be wounded too seriously to reach the finish line.

When an elementary school class is assigned a science project, what happens? Many children wait until the last night and then stay up late conducting an experiment and drawing a poster. Often there is one child who works on the project for months, repeats the experiment numerous times, writes a long paper examining the question from every conceivable angle, covers a large hinged board with the pertinent data, and requests permission to turn it in the afternoon before it is due so her dad can haul it in his truck because she is unable to transport it on the school bus in the morning. How positive is the reaction of the teachers, other parents, and students?

We frequently proclaim that we want to encourage divergent thinking but do we actually reward it? Many gifted children learn early that the world accepts and embraces mediocrity. To work harder, to strive for the greater achievement, to produce creatively, involves personal risk. Deviation from the average opens the individual to ridicule; furthermore, the extrinsic rewards are few.

Creativity is accepted and expected in art, music, and theatre. Yet productive creativity in the academic areas is crucial to future developments. Children must develop courage, strength, and stamina to survive and thrive. It is up to adults to provide a safe environment for risks, acknowledge attempts at multi-level products, accept mistakes as part of the process, and reward productive creativity.

Accepting Mistakes

We must teach children that mistakes are normal. There are times when we learn the most from mistakes. Trials and errors contribute to our foundation of knowledge and experience. One of the most beneficial experiences for gifted children is to see parents and teachers readily admit mistakes and take them in stride, to see adults laugh at their own mistakes. When we provide a loving, caring, safe environment for children, they will be more comfortable and accepting of their mistakes.

Knowing When to Stop

We cannot do everything we would like to do in life, so we must choose those things that are most important to us. Of those we choose, we do not have the time to complete every task to our highest abilities. Adults teach children to strive toward excellence in the areas they choose as the most important. They encourage children to plan and prioritize, the essential skills in the adult world.

Gifted children tend toward perfectionism because they know they can produce a better product than the standard. Adults teach them the difference between striving for excellence and pursuing the illusion of perfection. Gifted children must often learn to value and allocate their time so that they know when to stop.

Having Fun

There are innumerable fun ways to nurture productive creativity. When children are actively engaged in living, life is learning and learning is life. They perceive life as an adventure and seek to explore the world. One goal should be to ignite their interests and allow them to pursue their passions into new realms of discovery and understanding. However their endeavors turn, adults should prize their individuality, reward their productivity, and celebrate going all the way to the finish line.

Let's look at some examples of ways for parents to nurture productive creativity by prompting activities at home.

For instance, parents could consider prompting young children to determine which solutions create the most bubbles for a bubble bath. Ask the children what solutions could be tested. After discussion of solutions and mixtures, they decide to test the bubble producing capacity of dishwashing liquid vs. laundry detergent vs. official bubble bath liquid vs. official bubble bath powder. Next suggest they determine the controls and write down the procedure they will use. They debate how much water to draw in the tub and how they are going to measure it, whether the temperature of the water should be controlled, when to add the bubble solutions and how much, and how to churn the water to produce the bubbles. The children gather the materials, approach the tub, and consider the practical aspects, such as who gets to clean the bathtub before the experiment. By this point parents must turn thoughts of "Is this worth it?" to positive thoughts like, "Mmm... multiple days of clean kids and clean bathtub."

An example of an outdoor activity prompt is to imagine a historic battle. Together with the children, stand in an open field in the afternoon heat of a mid-summer day and read an account of a historic war battle. Together imagine the soldiers, hot and sticky in wool uniforms carrying packs and gear, hungry and sick from lack of food, and tired from marching miles, faced with a fight for their lives and their homeland. Children may ask about the soldiers' children, horses, crops, and homes. They wonder about the medical techniques, supplies, and procedures. Together imagine their loneliness and their lack of privacy. Children may comment that they are hot and hungry and the bugs are biting. Again you imagine the soldiers.

Of all the activities my children and I have tried in the last 15 years, some of our favorites are:

- Conduct brand tests of muffin mixes and brownie mixes. Experiment with substituting mashed bananas, pureed pumpkin, applesauce, strawberry jam, etc. for oil in your favorite mix. Share the baked goods with friends.

- Hand-stitch remnants together to make a quilt for a stuffed animal.
- Play in the rain.
- Eat dessert first.
- Decorate trikes, draw signs, don costumes, and then parade around the neighborhood.
- Design apparel for 100 years from now.
- Hold a neighborhood pet show in the backyard complete with ribbons made for the winners. (Make sure there is plenty of water and that every pet wins something.)
- Write and illustrate a family story or legend. Bind as a book.
- Cut out magazine pictures and compete in composing wild stories using all the picture prompts.
- Experiment with changing your sleep/wake cycle.

LAGNIAPPE

Some of our most cherished moments are those we share with our families. As a bonus gift from our family to yours, here is one of our most fun and most rewarding activities. May your family reap multiple rewards.

One of our family's traditions is a book hunt on Christmas morning. We began innocently (or conspiratorially) the year our children were 7 and 9 and Santa was delivering a set of encyclopedias. Since Mr. & Mrs. Claus were not certain a set of encyclopedias would be a wondrous sight on Christmas morning, they composed a series of 23 rhyming riddle clues, glued one to each wrapped book, and hid the books separately. The book hunt was such fun it became a cherished tradition with the mandate that in future years the girls each wanted their own hunt so they could race. Finding 20 great books for each child each Christmas was the easy part. Through the years Mr. & Mrs. Claus took turns writing the rhyming trails until one year Mr. Claus decreed that the elves write clues for their counterpart. Our Christmas morning book hunt continues, our voracious readers are now 19 and 21, (yes, they know all the hiding places forcing Mr. & Mrs. C. to be ever more creative) and yearly we all lament... so many books, so little time.

So little time, so much to live.

Develop the gifts, enrich the future.

TAGT Executive Director Search

The Texas Association for the Gifted and Talented is inviting applications for the position of executive director. Reporting to the executive board, the executive director is the association's chief executive officer and public spokesperson. Critical skills and experiences include the abilities to: 1) communicate the association's vision and translate it into organizational action, 2) manage and sustain association resources and external relations, including community and government relations, 3) provide effective leadership for the implementation of the strategic plan, 4) direct a full-time staff of five and manage multiple service contracts, 5) prepare and implement an annual budget of $1 million, and 6) ensure effective service and benefits to association members.

The Search Committee is seeking an entrepreneurial leader with exceptional communication, organization and managerial skills; one with demonstrated success in the administration of multiple program initiatives; and sufficient knowledge about computer technology and its uses to communicate and market priority association programs. The candidate must have earned an advanced degree and/or comparable professional degree. Salary is commensurate with experience, with total salary and benefits package ranging from $75,000 to $90,000 annually. The association is headquartered in downtown Austin, Texas, two blocks east of the state capitol. Residency in Austin is required. Interested individuals should submit a resume and letter of interest to: Dr. Susan Johnsen, TAGT Executive Director Search, Baylor University, School of Education, P. O. Box 97304, Waco, TX 76798-7304. The deadline for applications is August 27, 1999.

(from JUNTUNE, page 11)

of psychometric intelligence, once a threshold IQ of 120 has been reached (p. 20).

Students with high academic achievements may display few of the characteristics needed for creativity. They may be so secure in their accomplishments that they become complacent. The learning of facts becomes so easy that they may have no incentive to question or doubt existing knowledge (Csikszentmihalyi, 1996).

Over the years, Torrance has brought the IQ/creativity dilemma to light by conducting eight studies on the relationship between intelligence and creativity. His studies led him to conclude that the selection of the top 20 percent on IQ or intellectual aptitude measures would exclude 70 percent of the top 20 percent on creativity measures (Khatena, 1992). Finding the highly creative students will require one to take a critical look at the identification profile used in most districts.

Amabile (1989) warns us about relying too heavily on creativity test scores. Creativity tests only measure some of the abilities that are related to creativity. Since the tests are often administered in "test-like" school setting, students become more anxious and inflexible in their thinking. Students who choose to spend some time to think about their responses are penalized because many tests are scored on number of responses during a given time period. The lower number of responses results in a lower number of points for novelty and elaboration (Piirto, 1998). Amabile (1989) suggests that parents and teachers should focus on conducting careful observations of a child's creative behaviors. Observation allows for a greater range of creativity related abilities and behaviors to be revealed. The finding and serving of creatively gifted students will require three things from a district (see figure 1).

The teaching of creative thinking is a small part of our educational responsibility to our creatively gifted population. We must examine our programs to ensure that the creatively gifted are being identified and appropriately served. We must commit to helping these students develop more fully the traits and characteristics that brought them to our attention initially.

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(from PORTER, page 8)

possibly be that the adjunct of creativity will be the most powerful aptitude that will allow the world to adapt to the complex life styles of the next millennium. Intelligence alone will not be enough.

Creativity in the Real World

PBS from time to time airs shows about thoughtful people creating. The story of Andrew Wiles and his discovery poignantly illustrates the intelligence, motivation, and creativity link. Wiles secluded himself for seven years to study and research Fermat's Last Theorem dealing with elliptical and modular shapes. The sequence of events traced Wiles' unrelenting struggle to solve this theorem. Twice he thought he had conquered it only to discover that he had not. In spite of this setback, he continued on. When faced with a block, Wiles walked along the river to "relax and to allow the subconscious to continue working." He asked himself, "What would happen if?" and "How could it possibly be?" as he continued his task. Finally, after seven years, he was successful. Knowledge, hard work, self-discipline, time to relax, and tenacity, even in the face of setbacks, is a true picture of creativity and intelligence.

Another example occurred during the return flight of Apollo 13 when a problem occurred with the spacecraft. The ground crew was called upon to solve the problem. They came together, under pressure of life and death, with intelligence, knowledge, and creativity to identify both the problem and the underlying problem and to set about finding the solution. It did not come instantly. They brainstormed, they piggy-backed off each other's ideas, they argued, they failed, they corrected, they tried again, they invented, they tore it apart and rebuilt it, and, finally, they were triumphant.

Summary

Creativity is complex and powerful. Identifying creativity in young children and nurturing it in their homes and in their schools is of utmost importance if it is to exist into adulthood. Observable positive and negative behaviors manifest in creative individuals aiding identification. Creativity goes beyond possessing characteristics and is connected with intelligence, talent, motivation, and interest where the creative intersection occurs and productivity flourishes.

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(from WINNER, page 5)

today's abstract, conceptual, minimalist art world, it does not seem that traditional drawing ability plays any role at all.

Perhaps the most important factor in predicting domain creativity is personality. Those who make it into the roster of domain creators tend to have a certain set of personality traits, and these are far more important than possessing high ability or having been a child prodigy. Domain creators are hard-driving, focused, dominant, independent, and risk taking (cf. Barron, 1958; Cattell, 1965; Gardner, 1993; Helson & Crutchfield, 1970; MacKinnon, 1965; Simonton, 1994; Winner, 1996). They have to be willing to risk failure, since anything new is likely at first to be ignored or repudiated. Perhaps most important of all is the desire to shake things up, the desire to alter an established tradition, to reject the prevailing view or way of doing things. Creators are oppositional and discontented with the way things are.

Of course there is no necessary relation between domain creativity and stress or psychopathology, since no one has ever claimed that all creators suffer from these. But there is most probably a necessary relation between domain creativity and personality. One does not have to want to be gifted; one either is or is not. But one does have to want to be creative. Domain creators are motivated to leave their mark on a domain.

The above analysis leads to an important research question, one that has been much discussed (e.g., Simonton, 1994; Winner, 1996; Yewchuk, 1995), but for which we do not have a clear answer. This is the question of whether we can predict which gifted children will become domain creators. Ore might begin to address this question by looking retrospectively at the childhood abilities and personalities of known domain creators, and comparing these abilities to those of gifted children today. Coupled with this, one could conduct longitudinal studies of gifted children in order to single out those few who become domain creators. This research agenda would have as its goal the elucidation of factors that are predictive of later mastery. Such an understanding is needed if we are to optimize education for highly gifted children so that more may go on to become major creators in their domains as adults.

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(from PHILLIPS, page 9)

The Creative Product Analysis Matrix

1. Novelty: the extent of the newness of the product
- **Original:** very rarely seen among products made by people with similar training or experience.
- **Germinal:** likely to suggest other highly original products
- **Surprising:** likely to shock or startle the mind

2. Resolution: the degree to which a product meets the needs of the problem situation.
- **Logical:** follows established rules that exist within a particular discipline.
- **Useful:** well-recognized practical applications to its field.
- **Valuable:** fulfills observers' needs

3. Elaboration and Synthesis: the extent to which the product combines unlike elements into a developed whole.
- **Organic:** has central, organizing core
- **Elegant:** refined and understated
- **Complex:** combines a variety of elements at a variety of levels
- **Understandable:** presents itself in clearly stated manner
- **Well-Crafted:** shows evidence of revision and refinement

Figure 1

In summary, evaluating creative products is a necessary and valuable part of a program for gifted and talented students. It has been difficult for teachers to find a method for determining objective and unbiased evaluations of their students' work and products. While CPAM provides the basis for this kind of evaluation through its structure of general categories and specific subscales, it is, like most tools, only as good as its user, just as the Burger Buddy depends, to some degree, on the expertise of the griller. Further research and development remains to be done in the area of creative product evaluation.

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After all the student evaluations are complete, they can be summarized both qualitatively and quantitatively using simple statistics and bar or line graphs so that the student can visually see the results of the evaluations.

Criterion Ratings for The Burger Buddy

Criteria	Level		
	Low	Medium	High
• Original		✓	
• Germinal		✓	
• Surprising		✓	
• Logical			✓
• Useful			✓
• Valuable			✓
• Organic			✓
• Elegant			✓
• Complex		✓	
• Understandable			✓
• Well-Crafted		✓	

Figure 2

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(from PIIRTO, page 1)

contrast with his blazer and striped tie. He spoke with a microphone snapped to that tie and his voice boomed over the ballroom of the hotel where the conference was being held. Katherine had not expected so many people to be here. There were almost a thousand people! Were all of them educators of the gifted and talented?

Overhead transparency after overhead transparency bloomed behind him on the giant screen. There were lots of diagrams and curves and arrows and dots and lists. He illustrated his points with cartoons cut out from "Peanuts." There was a list of tests also, but Katherine couldn't believe that you could give a test for creativity.

Well, he must know. She scanned the program as he spoke and underlined all the sessions that were on creativity. If he was a keynote speaker, and the topic was creativity, obviously she was supposed to teach creativity. This would be her main emphasis at this convention. She collected the handouts of the dots and diagrams and psychological words, and she hurried down the hallway of the hotel convention wing to a small room.

There with a pitcher of iced water and two glasses behind a table with a podium and a microphone and a smaller screen and another overhead projector, were two middle-aged women. They were local coordinators in a faraway corner of the state, and they were going to talk about how to enhance creativity in elementary school children. They also had many overheads blooming like flowers on the conference room wall, and they had the group play some simple games. It was fun, and everyone relaxed. But Katherine was getting anxious. The coordinators were very good speakers, and they were using words like "fluency" and "flexibility" and "elaboration" and they talked about creativity as if it were "problem-solving."

Well, they must know, Katharine thought, for they have been in this field a lot longer than I have. But in the back of her mind, she thought that creativity was a little bit more than fun and games and generating alternative solutions (Piirto, 1998).

When I wrote that, I had already been an educator of the gifted and talented for 13 years, had been a county coordinator in two states, a principal of New York City's oldest school for gifted children, and was now a college professor. But in my inner life, my real life, I was also an artist, a published novelist, and a poet, and I saw the world through an artist's eyes. I had worked for awhile as a Poet in the Schools in the National Endowment for the Arts "Artist in the Schools" program during the late 1970s and early 1980s.

I began to think about my own creative process, for I was certainly a creative person, wasn't I? Here I was giving Guilfordian workshops on fluency, flexibility, and elaboration as one of the first SOI (Structure of Intellect) trainers, but my own life contained little brainstorming, SCAMPERing, generating of alternative solutions, or creative problem-solving according to the flow charts I had been given at the many workshops I attended. In fact, I only knew one person who had really used the CPS process in her real life, and she was a fellow professional in our field. She and her husband, a teacher, had had some rocky times in their marriage, and they had gone to a restaurant and had jotted down the "mess," and had brainstormed solutions.

But as I read and reflected, I found that most creative adults who had had biographies written about them, who had written memoirs, who had been interviewed and researched, talked about their creative process in more organic terms. The creative process has engaged the best thinkers of the world from prehistoric times. Common mythological perspectives on the creative process have viewed it as the visitation of the Muse. Historically, the creative process has been tied with desires for spiritual unity and with the need for personal expression. Many creative products have resulted from insight, illumination, and unconscious processing. Solitude seems to be a necessary condition during some aspects of the creative process. The creative process can be viewed in the context of a person's life and the historical milieu. Contemporary psychological and religious thought have emphasized that the creative process has universal implications. What is popularly called "right-brain thinking," as well as visualization, metaphorization, and imagery seem to help people in the creative process. The creative process is a concern of scientists as well as humanists. Scientific experimentation has resulted in the demystifying of many popular creative process beliefs. I concluded that the repertoires of school people, who often use only the Creative Problem Solving process in enhancing creativity, should be expanded.

Another, perhaps the most, popular theory of the creative process is that there are four steps. This is the theory propounded by Wallas in 1926. Wallas was one of the pioneers in critical (not creative) thinking, working out of the tradition established by John Dewey and Horace Mann. He said that there are four stages in the creative process:

- Preparation,
- Incubation,
- Illumination, and
- Verification.

In the first stage, the person does both formal and informal work; she gets herself ready for the act of creation by studying, thinking, searching for answers, asking people, etc. In the second stage, the process rests, is in gestation, the person is pregnant with the creative product. The unconscious is working on the problem. In the third stage, a solution arises, and light is thrown on the problem. The most famous example of this in the creativity literature is the vision of Archimedes rising from his bathtub and running naked down the streets, shouting "Eureka! I have it!" when he understands the theory of the displacement of water. The illumination, the "aha," had dawned upon him (Wallas, 1926).

I found much similarity in what I read from people in the various domains. For example, the poet, novelist, and screenwriter Jim Harrison described his creative process in writing poetry, and it seems remarkably like that described by Wallas:

> *A poem seems to condense the normal evolutionary process infinitely. There is the distressed, nonadaptive state; an unconscious moving into the darkness of the problem or irritant; a gradual surfacing, then immediate righting or balancing by metaphor, as if you tipped a buoy over by force then let it snap upwards; the sense of relief, and the casting and recasting the work into its final form. The last stage "calcifies," or kills the problem, and you are open to a repetition of the process, though not necessarily willing. Though this is all rather simplified, it captures, I think, the essence of the process. There must be the understanding of time lapse; though the "gradual surfacing" may take months, the space between the first sketch and final form an even longer period of time* (Harrison, 1991).

Many of the creative and productive adults whose creativity I read about seemed to have creative processes that fell into thirteen categories:

- They seem to have rituals; for example, they like to walk;
- they crave silence;
- they go to retreats and colonies;
- they are inspired by travel;
- they use imagination;
- they trust their dreams;
- they seek solitude so they may go into a state of reverie (or flow);

- they fast;
- they meditate;
- they get inspiration from the muse;
- they are inspired by others' works of art, science, and music;
- they improvise;
- if they are blocked, they read or write self-help books.

In fact, the creative process often verges on the spiritual, but I had never heard that mentioned in the education workshops I attended.

I began to offer an undergraduate interdisciplinary studies course called "Creativity and the Creative Process," and I began to try out some ideas that tapped into this "oceanic consciousness," as Brewster Ghiselin called it (1952). The course became popular with undergraduates majoring in the liberal arts, though not so popular among education majors. A year or so later, I saw a new book by University of Chicago psychologist Mihalyi Csikszentmihalyi, called *Flow*, which confirmed my own experiences and those of the creative adults I knew (1990). When schools asked me to do workshops, and when I spoke at conferences, I began to try my newly derived and idiosyncratic exercises out with the participants. My students in the graduate course in talent development education, called "Creativity for Teachers of the Talented," also tried them out.

By now, I have assembled a full course, nay, more than that, of activities that tap into the mysterious, nebulous, dreamy, solitary, quietness of the creative process as it has been written about and talked about by adult creators. A typical creativity course taught by me utilizes exercises in the core attitudes of risk-taking and naiveté. We do a lot of trust building by cheering each other's creative efforts. The students also try exercises in cultivating self-discipline by working daily in creativity thoughtlogs. We work with the five I's:

- **Imagery**, including guided imagery and film script visualizing;
- **Imagination**, including storytelling;
- **Intuition**, including the intuition probe, psychic intuition, and dreams;
- **Insight**, including grasping the gestalt, going for the aha!, zen sketching; and
- **Inspiration**, including the visitation of the muse, creativity rituals such as solitude, creating ideal conditions, and using background music.

We imitate those creative people who treasure nature and its contents, making naturalist notations and drawings. I have an exercise called "This is the day which the Lord hath made / Let us rejoice and be glad in it." We try meditation, meditating on beauty, on the dark side, on God. We do improvisation with jazz, theater, word rivers, writing practice, creative movement, rhythm and drumming, scat singing, and doodling. We try to see the humor in everything and one day everyone brings a joke. Last fall I had to caution them not to bring any Monica jokes, as these would descend into areas not appropriate for our small, conservative Christian college. (I failed, and the day descended all right, as we laughed and shifted our embarrassed eyes.)

We cultivate all five of our senses and also blend them for a sense of synaesthesia. We vigorously exercise so endorphins will kick in. We "trance dance" to a sinuous and hypnotic videotape that allows free expression while providing a fine workout, and even the guys participate if I do it late enough in the semester and if the lights are down and the blinds are pulled.

We focus on my notion of the thorn of fiery passion as explicated in my model of the Pyramid of Talent Development (see Figure 1).

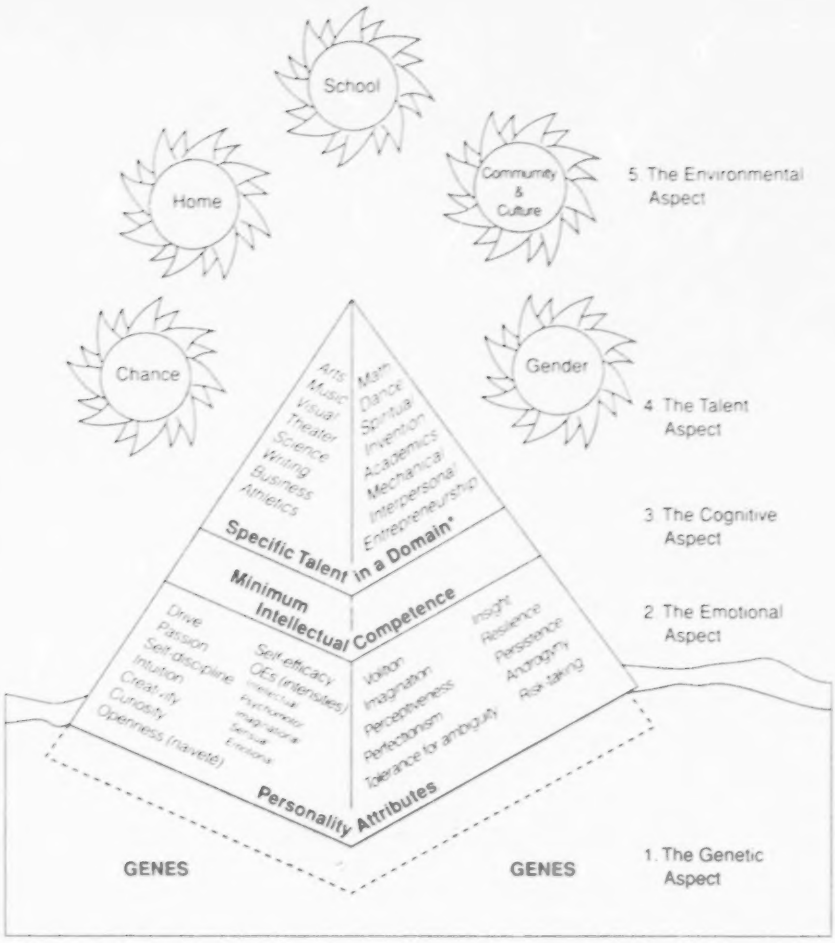
We try to find our domains of passion, that which we can't *not* do. We explore the joys of good conversation and start a monthly salon at my house. We visit a cemetery. We visit a beautiful and silent church with symbolic stained glass windows to meditate on God. We hike in nearby nature parks to meditate on nature. We go to an art museum to meditate on beauty. We visit a bookstore, a library; for the midterm the students must attend a live concert, a play, a poetry reading, or a lecture to honor the creativity of talented others.

The culmination of the course is an individual creativity project. The students may not use already existing kits or molds and must avoid the "season curriculum" of Christmas decorations, Hallowe'en pumpkins, or St. Patrick's Day shamrocks. One student in Finland wrote a poem when we visited the art museum, and it became the lyrics for the first song she composed. Other individual creativity projects have included an autobiographical video ("My creative self"); performance of an original song; performance of an original radio play; design and modeling of an original dress for a sorority formal; a plan for an advertising campaign; a synchronized swimming routine; a grunge rock band audio tape; a photographic exhibit; an exhibit of original art works; a reading of an original short story; an autobiographical multimedia presentation; a translation into English of Chinese, Greek, or Spanish literature; an original dance routine; a new recipe for scones; an original afghan; designs for costumes for a play; a reading of original poetry; a business plan for a new business; a music video; *a capella* singing; an original rock n' roll song; philosophical musings about the meaning of life; and display and demonstration of a particularly creative Thoughtlog.

One football player, a defensive back, took all the game tapes for his entire college career, spliced them together to show himself in the improvisatory acts of dodging, running, and hitting. One student thought that his creativity came in his preparation for and study of contemporary popular music. He took all the concerts he had attended and did a project on how to get the most out of concert attendance. We laughed uproariously as he peeled off concert t-shirt after concert t-shirt, putting on a tropical Jimmy Buffett hat, passing out Bic lighters for us to sway to the music of the Grateful Dead, flashing strobe lights as he stripped down to his finale, a Black Sabbath t-shirt. Projects are evaluated with a holistic scoring system, and we are often so moved at the projects that we weep. At the end of the course, most agree that indeed, creativity can be enhanced through direct teaching. (See Figure 2 for a list of some of the activities I have devised.)

My students who are becoming licensed to be teachers of the gifted and talented tell me that yes, indeed, the K-12 students that they work with can begin to see the creative process as something that is, at base, an emotional journey more than a cognitive one. Every week they try out the activities we have done in class, modifying them for their own use, for I am a firm believer that what I teach is conceptual and not practical. I am not giving my students exercises to try on Monday morning, but a conceptual framework from which they can devise their own exercises, suitable for the age of the groups they are teaching. The **concept** of "risk-taking" is what is important; the **concept** of "inspiration" is important to devise an activity at the application level that is suitable for the children one teaches. This is where the true creativity of the teacher comes in.

Over the past few years, I have learned to trust my own creative process instead of mimicking the thought of others. In writing the two big and detailed nonfiction books, *Talented Children and Adults: Their Development and Education*, and *Understanding Those Who Create*, I had to draw on everything I knew about the field of the education of the gifted and talented. I read and read, organized, thought, walked, swam, obsessed on, and slept these books, but it



* Talent becomes a "calling"

THE PIIRTO PYRAMID OF TALENT DEVELOPMENT

(From the 1999 textbook by Jane Piirto, *Talented Children and Adults: Their Development and Education*, 2nd Edition. Columbus, OH: Prentice Hall-Merrill. Used with permission of the author.)

Figure 1

was self-discipline that got me through. I would write for about an hour every day, seven days a week. When it came time to put it all together, in the last chapter of *Understanding Those Who Create*, I was no longer so shy about trusting my own knowledge. While swimming lengths at the university pool during its open hours, I began to make a list of what I knew about how to enhance creativity in children. The list came out to have twelve items (see Figure 3, page 24).

Teachers and parents can work in partnership to enhance creativity. First of all, creativity is affective—the necessary risk-taking and sense of openness to experience, or naiveté required demand a safe environment in which to explore. Both the home and the school should try to provide such. Trust is also important; that is, that someone who is trying out creatively should not be put down, and should be permitted to fail as well as to star. A person who tries out creativity should have a safe group (the class, the family) with whom to be.

My friends help a lot. My course evolves and changes as experiences in my life happen. A friend (a former student, F. Christopher Reynolds) and I began to combine his emphasis on the affective and my emphasis on the creative process as I understood it from the reading I was doing of biographies. He had published an article (1990) on the creativity enhancement course he gives in the high school where he teaches French. He is a singer songwriter and understands, from his own artistic work, how the emotional must be tapped into in order for true creativity to flower. His finger painting exercise in which we

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paint "where we dwell" became a part of my teaching repertoire. We do workshops together, and he became an adjunct professor at our university as well as an instructor in our summer program for talented adolescents.

A friend who is a poet-beekeeper in Colorado contributed his knowledge of the creative process as he was inspired by his muse, a famous woman writer, to do some of the best work of his life while in his fifties (Tipton, 1995, 1998). His experience inspired a lesson on love, on the importance of eros in the works of creative people. Students write a love poem, put it on beautiful stationery, seal it with sealing wax, and send it or not. Sentimentality is out, and often the poems are angry, defiant, hurt, scared, reflective of the emotions inspired by eros in all of our lives.

A friend who is a blues musician talked about wanting, as a child, to "crawl into the speakers," and his acute auditory and improvisational creativity inspired a lesson about the use of popular music in inspiration (Aiken, 1997). Another musician friend talked about spending hours teaching himself to play yet another instrument, losing time consciousness while he does so (Gaines, 1999). Examples could go on. The point is that we artistic types are not alone. We have many friends who experience their creativity in ways similar to the ways we experience it. The point is that many creative people use techniques and inspirations that have been little written about or modeled in the classroom.

My evolving process as a creative teacher is to try to capture some of what I have learned and to prepare activities or exercises that can make conscious what has, for many, been rather unconscious. Perhaps you will do the same.

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A Course in Organic Creativity

- **Working on Core Attitudes**
  - Cultivating Risk-taking
  - Cultivating Naiveté
  - Cultivating Self-discipline with Thoughtlogs
  - Cultivating group trust (if in a group)
- **The Five I's**
  - Imagery
    - 10 Minute Movie
    - Guided Imagery
  - Imagination
  - Intuition
    - Intuition Probe, Psychic Intuition, Dreams and Intuition
  - Insight
    - Grasping the Gestalt, Aha, Zen Sketching
  - Inspiration
    - Visitation of the Muse
- **Creativity Rituals**
  - Solitude
  - Creating Ideal Conditions
  - Using Background Music
- **Nature**
  - I am a Naturalist
  - This Is the Day Which the Lord Hath Made
- **Meditation**
  - Meditate on Beauty, Meditate on the Dark Side, Meditate on God
- **Improvisation**
  - Jazz, Theater, Word Rivers, Writing Practice, Creative Movement, Rhythm & Drumming, Scat Singing, Doodling
- **Use of Humor: Telling Jokes**
- **Synaesthesia**
  - Seeing, Hearing, Smelling, Tasting, Touching
- **Exercise**
  - A Walk, a Run, Aerobics, a Team Game
- **Exploring Passion in a Domain**
  - Stepping into the River
  - Noticing Flow
- **Conversation: a Salon**
- **A Visit to a** Bookstore/library, a Museum, a Concert, a Play, a Movie, a Reading or Lecture, a Place (Travel)
- **Individual Creativity Project**

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Figure 2

How Parents and Teachers Can Enhance Creativity in Children

- Provide a private place for creative work to be done.
- Provide materials (e.g. musical instruments, sketch books).
- Encourage and display the child's creative work and avoid overly evaluating it.
- Do your own creative work and let the child see you.
- Pay attention to what your family mythology is teaching.
- Value the creative work of others.
- Avoid emphasizing sex-role stereotypes.
- Provide private lessons and special classes.
- If hardship comes into your life, use the hardship positively, to encourage the child to express him/herself through metaphor.
- Emphasize that talent is only a small part of creative production and that discipline and practice are important.
- Allow the child to be "odd"; avoid emphasizing socialization at the expense of creative expression.
- Interact with the child with kind humor.
- Get creativity training.

Used with permission by Jane Piirto (1998; 1999).

Figure 3

(from MCLENDON, page 3)

reviewed no later than four years after their effective dates. The sunset review of SBOE rules for gifted education, Chapter 89, Adaptations for Special Populations, Subchapter A. Gifted/Talented Education, is scheduled for first reading in September, 1999. The second reading will be in November, 1999, with third reading and final approval in January, 2000.

TAGT members should be prepared to counter the testimony of representatives from ultraconservative groups who, no doubt, will be on hand to oppose certain parts of the g/t rules at the State Board meeting in September. The Curriculum and Instruction Committee, chaired by Geraldine Miller, District 12, (1100 Providence Tower West, 5001 Spring Valley Road, Dallas, TX 75244-3910; phone: (972) 419-4000; fax: (972) 522-8560), will hear testimony on the g/t rules. Other members of that committee include: Rosie Collins Sorrells, Ed.D., Vice Chair, District 13, (5506 Glen Forest Lane, Dallas, TX 75241; phone: (214) 374- 1521; fax: (214) 376-5107); Mary Helen Berlanga, District 2, (2727 Morgan Avenue, Corpus Christi, TX 78405; phone: (512) 882-8284; fax: (512) 881-1029); Richard B. Neill, District 11, (4701 Alta Mesa Boulevard, Fort Worth, TX 76133; phone: (817) 292-8080; fax: (817) 370- 7763); and Richard Watson, District 14, (P.O. Box 249, Gorman, TX 76454; phone: (254) 965-9007; fax: (254) 965-6980).

The TAGT leadership recommends that g/t advocates begin now to write Mrs. Miller and members of her committee confirming their support for the continuation of current g/t rules. We also suggest that a copy of all communications to the Curriculum and Instruction Committee be forwarded to one's own State Board representative, as the full board must approve rules at all three readings before final adoption in January, 2000. Visit the TAGT Web site for information updates relating to the sunset review of SBOE g/t rules and to see a sample letter with addresses for each member of the State Board. (http://www-tenet.cc.utexas.edu/tagt/)

Update on NAGC's Federal Legislative Initiative

NAGC deserves congratulations for its focused legislative initiative this session of Congress. To NAGC's credit, the Gifted and Talented Students Education Act of 1999 (H.R. 637) was introduced this session in the House of Representatives by Congressman Elton Gallegly (California) and in the Senate (S.505) by Senator Charles Grassley (Iowa). If approved, this legislation would provide grant money totaling $160 million directly to states to develop and strengthen services for gifted children. Allocation of grant monies would be based on the state's student population, with each state receiving a minimum of $1 million. The legislation emphasizes the following priority areas for expenditures:

Personnel Preparation, Innovative Programs and Services, Distance Learning, and Program Administration/Coordination (the latter limited to 10% of a state's grant money). A recent communication from NAGC staff indicated that both bills are pending before their respective education committees, awaiting hearings. For NAGC updates on the Gifted and Talented Students Education Act of 1999, visit the NAGC Web site at www.nacg.org.

What the Research Says about Creativity

Susan Johnsen

J. P. Guilford is often called the father of modern creativity research. Using factor analysis, he identified divergent production as a missing ingredient of most intelligence tests. This adversarial beginning placed the construct of creativity in a fragile position next to the formidable advocates of intelligence tests. Indeed, the early proliferation of studies related to creativity almost disappeared during the 70's, recently resurfacing with Gardner, Sternberg, and other theorists.

Many questions remain about creativity and its relationship to the field of gifted education: How are creativity and intelligence related? Is creativity related to personality traits or does it develop over time? Is creativity a separate domain or domain specific? Should creativity skills be taught as a topic in their own right and/or embedded within specific core subject areas? Are gifted programs aligned more with intelligent or creative behaviors? What are the educational, social, emotional, and cultural factors that influence creative production? Some of these questions are addressed in the journals in gifted education, many more in research articles outside the traditional educational sphere. For example, Simonton is using historiometric inquiry to examine genius, creativity and leadership. Feldman, Csikzentmihalyi, and Gardner are proposing frameworks for building new theories. These scholars appear to be moving in a different direction from professionals in gifted education who are focusing on the field's traditional mission of serving and challenging academically talented students. While rigorous curriculum is certainly important, particularly in this time of accountability and international assessment, professionals still must provide for those creative students who are radical innovators and do not necessarily fit into advanced placement or structured programs.

> "The most beautiful thing we can experience is the mysterious. It is the source of all true art and science."
>
> —Albert Einstein
> *What I Believe*, (1930)

For this review, articles published in *Gifted and Talented International, Gifted Child Quarterly, Journal for the Education of the Gifted, Roeper Review*, and *The Journal of Secondary Gifted Education* during the past ten years were examined. To be included, the study needed to have an empirical base—not simply opinions or advice. Second, it needed to have creativity as a focus—a primary question, an important part of the treatment, or a desired effect from the treatment. Finally, there needed to be some application to schools—curriculum, assessment, or classroom practices. These three criteria eliminated the summary of purely theoretical or conceptual models. While many are presented in the literature and should be read by professionals in the field of gifted education, I felt they were beyond the scope of this review. The research tends to address characteristics of creative individuals, assessment, influencing factors, effective strategies, and teacher characteristics.

Teachers may not have the same conception of creativity as those held by researchers (Westby, 1997). While they include such characteristics as "is responsible," "is good-natured," and "is sincere;" they omit others such as "is impulsive," "makes up the rules," and "is a nonconformist" that are often traits listed under creative individuals. Unfortunately, the teachers associated these latter characteristics with their least favorite students. On the other hand, Hunsaker (1994) found that teachers often included divergent thinking as part of their conception of giftedness. Their conception, however, did not agree with their district definitions. A study in the United Kingdom compared creative and achieving children. They found that creative students were less happy at school, less hostile, showed greater perseverance in following their own interests, seemed more autonomous in their choices, and came from supportive homes that gave them more aesthetic experiences than did achieving students (Freeman, 1994).

Three studies examined characteristics that were specific to the domains of art and writing. Creative writers tend to use strategies in developing ideas or themes (Starko, 1989). Artists tend to report a personal experience with creativity that is both conscious and unconscious, emotionally driven, and intrinsically motivating (Gnezda-Smith, 1994). Gifted young artists also demonstrate their inventiveness and expressiveness in different ways but not in every product (Porath, 1993). The author concluded that multiple criteria should be used when identifying artistically talented children.

Other articles also focused on assessment. Baer (1994) discovered that language arts performance assessments were as stable as divergent thinking tests. There also appears to be a strong stable relationship between creative performance or products in high school and adult life accomplishments—more so than intelligence or school grades (Milgram & Hong, 1993; Torrance, 1993). In selecting products, students may find it helpful to determine their "expression style preference" so that they might have a greater impact on future audiences (Kettle, Renzulli, & Rizza, 1998). New instruments and methods were presented for identifying students who are talented in the arts. To identify those with potential talent in dance and music, professionals used a multisession audition process; for the visual arts, they used a specific drawing instrument that included such scoring criteria as sensory properties, formal properties, expressive properties, technical properties, and a title (Baum, Owen, & Oreck, 1996; Clark & Wilson, 1991). In one study, problem solving and imagery tasks appeared to identify those with high creativity and high intelligence scores (Carroll & Howieson, 1991). In another, emotional expressiveness on the Torrance Test of Creative Thinking tended to discriminate between gifted/LD students and gifted students (LaFrance, 1995). From these seven articles, it appears that assessments need to be matched to the population and to the domain. However, after reviewing 508 schools' assessments of creativity, Hunsaker and Callahan (1995) conclude that school districts tend to select creativity instruments without attending to the definition or the construct of creativity.

Factors that influence creative productivity were the focus of six articles. The majority of these identified influences by examining the lives of successful individuals retrospectively. Support of either a mentor or family, persistence, and high energy level tended to be

present in all of these case studies (Ambrose, Allen, & Huntley, 1994). In the cases of successful writers, they tended to write early and read extensively (McGreevy, 1995; Pirto, 1998). All tended to take risks and love what they did (Torrance, 1993). Some differences were noted. For example, Rogers (1998) found that successful men reported catalyzing experiences; yet, Piirto (1998) found that women writers struggled with unconventional families, conflicts, personal problems, and societal expectations. Unfortunately, the school may or may not have supported the talent, and Miller (1998) wondered whether or not the gift of creative genius could prevail against all odds. Two studies did look at the factors that influenced the production of projects in school. Delcourt (1993) found that high school students preferred projects that were interesting, enjoyable, provided opportunities for creative expression, and were successful—the project "worked." At the elementary and middle school level, Schack (1989) found that identification of an interesting topic, time to pursue it, feeling in control, quality of instruction and support, and expectations from others were important influences on the successful completion of creative products.

The majority of the articles focused on specific strategies that might be used to develop creativity. Strategies that appeared effective were analogy instruction on metaphor comprehension (Castillo, 1998), interdisciplinary field study units on creativity tests and children's drawings (Harris, 1995), early productivity on later productivity (Hébert, 1993; Schack, 1989), synectics on creative growth (Meador, 1994); Type III enrichment on completion of products (Olenchak, 1995); future problem solving on future roles and control over future events (Tallent- Runnels & Yarbrough, 1992); and problem solving on problem fluency, solution fluency, flexibility, originality, and use of criteria (Schack, 1993). One frequently used strategy—open-ended activities—may have both positive and negative effects (Hertzog, 1997, 1998). While these activities provided children with opportunities to pursue their interests and differentiate responses, children may select "comfortable" rather than "challenging" options.

Schoolwide enrichment clusters may have positive effects on students and on teachers (Reis, Gentry, & Maxfield, 1998). Within the clusters, students were able to complete a product and work with facilitators who have expertise in a shared interest area. In addition, teachers who facilitated clusters transferred some of the strategies into their regular classroom practices. Finally, one study focused on the characteristics of a memorable painting teacher (Zimmerman, 1991). He emphasized both cognitive and affective skills, had a sense of humor, was knowledgeable about his subject, understood and communicated effectively with his students, was deeply involved in teaching, and was a model as an artist.

Ambrose, D., Allen, J., & Huntley, S. (1994). Mentorship of the highly creative. *Roeper Review, 17,* 131-134. This article describes the relationships between three mentors and a highly gifted young artist attending Columbia University. The mentors assisted their protege in becoming more aware of and appreciating their cognitive strengths, supporting his talent emotionally, and in defining the nature of his life's work. The mentors also reported benefits through the mentorship.

Baer, J. (1994). Performance assessments of creativity: Do they have long-term stability? *Roeper Review, 17,* 7-11. The two reported studies were used to assess the long-term stability of three consensual techniques for evaluating creativity. In the first study 19 fourth graders' poems and stories were evaluated for creativity in two consecutive years by two different groups of experts. The results indicated that the story was more stable (.58) than the poetry writing (.44). In the second study 38 second graders were asked to tell a story about a picture book in October and in June. These stories were evaluated by two different groups of experts. In the second study the correlation between the two scores was .49. The author concluded that the stability coefficients of the performance assessments were as good as those of commonly used divergent thinking tests.

Baum, S. M., Owen, S. V., & Oreck, B. A. (1996). Talent beyond words: Identification of potential talent in dance and music in elementary students. *Gifted Child Quarterly, 40,* 93-101. This study focused on identifying students who had potential talent in dance and music. The sample was composed of 396 third grade children in two New York City elementary schools. The procedure involved a multisession audition process that incorporated an array of activities to allow observation of many aspects of talent. A panel of raters composed of two professional artist instructors, the classroom teacher, an arts educator, and an outside expert tallied relevant student behaviors. Preliminary data indicate that a psychometrically sound identification process was created for this sample.

Carroll, J., & Howieson, N. (1991). Recognizing creative thinking talent in the classroom. *Roeper Review, 14,* 68-71. In this study the authors attempted to identify indicators of creative thinking ability that might be useful in nominating students for gifted programs. Seventh grade students who had been selected using the Torrance Test of Creative Thinking and other placement instruments were invited to participate in a full day at an Australian university during their ninth year in school. The two intelligence groups were matched on creativity and the two creativity groups were matched on IQ using previously collected data. Students participated in problem solving and imagery tasks. The high creativity and high intelligence group had the highest scores across the activities.

Castillo, L. C. (1998). The effect of analogy instruction on young children's metaphor comprehension. *Roeper Review, 21,* 27-31. This study examined the relationship between analogy solution and metaphor comprehension by instructing young children in analogies. The subjects were 63 children aged 5.6 to 6.6 years. Children were randomly assigned to one of three conditions. Group 1 was given analogy instruction plus modeling. They were then asked to solve 10 new analogies and interpret 12 assessment metaphors. Group 2 was given analogies with no instruction and then asked to solve the new analogy problems and assessment metaphors. Control Group 3 looked through the analogy cards and then was asked to participate in the metaphor assessment. Results indicated that analogy training improved the young gifted children's metaphoric comprehension.

Clark, G. A., & Wilson, T. (1991). Screening and identifying gifted/talented students in the visual arts with Clark's Drawing Abilities Test. *Roeper Review, 13,* 92-96. This article discusses the design and testing of a new achievement-type test in the visual arts, Clark's Drawing Abilities Test. The test consists of four items that call for the delineation of skills or conceptions. Scoring criteria included sensory properties, formal properties, expressive properties, technical properties, and title. The CDAT significantly correlated with teacher's ratings on drawings and demographic characteristics such as age and grade.

Davis, G. A. (1989). Objectives and activities for teaching creative thinking. *Gifted Child Quarterly, 33,* 81-84. Davis offers

some suggestions for goals and objectives of creativity training. They include raising creativity consciousness and teaching creative attitudes, improving students' metacognitive understanding of creativity, strengthening creative abilities through exercise, teaching creative thinking techniques, and involving students in creative activities.

Delcourt, M. A. B. (1993). Creative productivity among secondary school students: Combining energy, interest, and imagination. ***Gifted Child Quarterly, 37,*** **23-31.** A sample of 18 students in grades 9 through 12 from four sites in the Northeast who had developed at least three quality products were included in this study that investigated factors influencing creative productive behaviors. Data sources were the family, the school, and the student. A qualitative analysis of student interviews, questionnaires, and documents was conducted. Factors that contributed to the development of products included parental support, childhood interests, positive attitudes toward school, positive peer relationships, positive self-concept, flexible planning, time allocated to the project, and appropriate audiences. Their most preferred projects were those in which they were genuinely interested, enjoyed, received feedback from the audience, had opportunities for creative expression, and were successful—the project "worked."

Freeman, J. (1994). Gifted school performance and creativity. ***Roeper Review, 17,*** **15-19.** The sample in this study was composed of 169 children in the United Kingdom. About 350 interviews were conducted in the children's and their parents' homes. Every interview was audio-taped, transcribed onto computer disk, and studied closely with statistical analysis. The responses indicated that there were two distinctly different groups—the achievers who took their greatest pleasure from achievement and the creatives who took their greatest pleasure from creativity. While the achievers had the highest hostility scores of any grouping, the creatives did not manage a single hostility score. The achievers clearly had more difficulty in coping with emotion and relationships while the creatives did not see any effect on their relationships. The achievers studied hard for success while the creatives enjoyed their interests more. Both groups' school-leaving examinations were closely related to their attitudes to school achievement. The creatives were less happy at school than those who were academically motivated. While the achievers had a greater variety of spare time activities than the creatives, relatively fewer of these were creative ones. The creatives had significantly greater perseverance in following their own interests and seemed to be more autonomous in their choices. The creatives came from homes that gave them more aesthetic experience and support while the achievers came from homes where school achievement took precedence over artistic activity. Several of the sample of creatives said that it took all their energy to get through a day's travel, school, and homework without considering alternative points of view. The author concludes with reasons that emphasis on academic school achievement can inhibit creativity.

Gnezda-Smith, N. (1994). The internal forces of creativity: When hearts start to flutter. ***Roeper Review, 17,*** **138-143.** The objectives of this study were to review theories regarding the internal forces of creativity and compare them to information derived from interviews with creative individuals. Four artistic people were interviewed, including an eleven year old, a high school student, a college student, and an adult with a well-established career. The people reported on the personal experience of creativity. They described conscious and unconscious thought, emotions that precipitated creative activity, and intrinsic motivators and rewards. Wallas' stages were evident in the descriptions of the creative process.

Harris, C. R. (1995). Developing creativity for third world gifted: A head start experiment. ***Gifted and Talented International, 12,*** **56-60.** An ethnographic study of 18 gifted Head Start students in the Republic of the Marshall Islands was the sample used in this study that attempted to examine the academic effects of two interdisciplinary units. The gifted four to six-year-old children were identified using the Draw-A- Person, PRIDE, and GIFT. Qualitative data collection consisted of theoretical sampling, non-participant and participant observation, random audio, video, and photographic recording. Quantitative data were pre- and posttests using the Torrance Tests of Creative Thinking, Figural Form, and Group Inventory for Finding Creative Talent. Field study was carried out three days per week, for six hours per day, with approximately two hours per week dedicated to the Head Start program over a period of four months. Results indicated a rise in creativity as measured by the TTCT and the GIFT and marked differences in the children's drawings. Other differences observed were gains in experimentation, social sensitivity, idea exchange, initiative, and extrapolation.

Hébert, T. P. (1993). Reflections at graduation: The long-term impact of elementary school experiences in creative productivity. ***Roeper Review, 16,*** **22-28.** This research examined the question: What is the long-term impact of creative productivity experiences in elementary school? Using nine case studies of students who had participated in the Renzulli Enrichment Triad Model in grades four through six, the author conducted in-depth, open-ended, tape-recorded interviews in their homes during the spring of their high school senior year. Products and available management plans provided additional information. The following themes emerged after analyzing the interviews, products, and plans: Type III interests affect post- secondary plans; a desire for creative outlets continues in high school; a decrease in Type III activities in junior high occurs; earlier Type II activities provide training for later productivity; and non-intellectual characteristics such as creativity and task commitment remain constant.

Hertzog, N. B. (1997). Open-ended activities and their role in maintaining challenge. ***Journal for the Education of the Gifted, 21,*** **54-81.** The author studied open-ended activities in one third-grade and one fourth-grade heterogeneously grouped classroom. Data sources included 115 hours of observations, 33 different open-ended activities, structured and semistructured interviews, and copies of students' responses to open-ended activities. The primary sources of data were field notes from the observations and transcripts from the interviews. In examining five cases, the author concluded that the children had opportunities to pursue their interests and work in their preferred learning styles while pursuing open-ended activities. However, the children chose activities that were "comfortable" and not "challenging." The author recommends that more research on ways to structure and use open-ended activities to challenge students.

Hertzog, N. B. (1998). Open-ended activities: Differentiation through learner responses. ***Gifted Child Quarterly, 42,*** **212-227.** In this ethnographic study, the researcher focused on how and in what ways the responses to open-ended activities of children identified as gifted differed from responses of children who were not identified as gifted in one third-grade and one fourth-grade heterogeneously grouped classrooms. "Open-ended" activities refer specifically to those

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with multiple responses rather than one correct answer. Data sources included observations over the course of one academic year, interviews with teachers and students, learning style and interest assessment instruments, and documents related to over 33 open-ended activities. The author found that the two teachers in the study evaluated students' responses relative to their expectations of the students, in relationship to the students' abilities. Frequently, students pursued the same knowledge in different ways, but when choices were provided within the content domain, greatest differences in responses occurred. The author found that differentiation of learner responses occurred even when the product involved limited student choices and was not "open."

Hunsaker, S. L. (1994). Creativity as a characteristic of giftedness: Teachers see it, then they don't. ***Roeper Review, 17,*** **11-15.** The author explored the interplay of official definitions and teachers' personal conceptions of giftedness. The sample included one district using a data-reduction matrix, one using multiple cut-offs, and one using holistic case studies. Nine teachers were selected from each of the three districts. Interviews and questionnaires were used as the data collection procedures. The researcher found that nearly every teacher mentioned some aspect of divergent thinking. Four teachers mentioned extraordinary convergent thinking such as quick recall and abstract reasoning. Three mentioned curiosity or an active intellect. The teachers' personal conceptions were not reflected in the official definitions within their school systems.

Hunsaker, S. L., & Callahan, C. M. (1995). Creativity and giftedness: Published instrument uses and abuses. ***Gifted Child Quarterly, 39,*** **110-114.** Creativity as a concept is complex and has a variety of definitions, and the development of an adequate measure of creativity is dependent upon an adequate conceptual definition. For example, some researchers view creativity as separate from intelligence, others as the foundation for giftedness, and others as a separate category or style. After reviewing methods used in 508 schools' assessment of creativity, the authors conclude that school districts tend to select instruments without attending to the definition of the construct.

Kettle, K. E., Renzulli, J. S., Rizza, M. G. (1998). Products of mind: Exploring student preferences for product development using 'My way . . . an expression style instrument' ***Gifted Child Quarterly, 42,*** **48-57.** A total of 3,532 students from 45 school districts in 24 states completed surveys designed to assess their interest in creating a variety of products. The authors conclude that if individuals understand their personal expression style preferences then they may develop technical skills related to these preferences and in the long run have a greater impact on future audiences. In addition, the instrument may be used in planning Type I activities, planning Type II seminars or mini-courses that teach students how to create certain products, and exploring the type of products students may want to create.

LaFrance, E. B. (1995). Creative thinking differences in three groups of exceptional children as expressed through completion of figural forms. ***Roeper Review, 17,*** **248-254.** This study focused on the differential performance of gifted/LD students on the Torrance Tests of Creative Thinking figural form B. The sample was drawn from four school districts across Ontario and consisted of 30 children who were gifted, 30 who were learning disabled, and 30 who were gifted and learning disabled. Their performances on the TTCT were analyzed both quantitatively and qualitatively. Qualitative differences existed among and within groups. In emotional expressiveness, the gifted/LD tended to be stronger than the other two groups. In humor, storytelling, and expressiveness of titles, the gifted students were stronger than ten percent of the other groups of students.

McGreevy, A. L. (1995). The parsonage children: An analysis of the creative early years of the Brontës at Haworth. ***Gifted Child Quarterly, 39,*** **146-153.** After reading about the Brontës' early lives and later lives, related works, studies of juvenilia, and early writings, the author drew the following conclusions regarding the development of their creativity. First, the Brontës were very productive, writing over 100 manuscripts and 22 books to become fluent and precise in their language. Second, they thought of themselves as "real writers" like their father. Third, the children challenged one another and collaborated with one another with Charlotte encouraging Emily to publish her work. Finally, their father discussed current issues with them and allowed enormous amounts of freedom of thought.

Meador, K. S. (1994). The effect of synectics training on gifted and nongifted kindergarten students. ***Journal for the Education of the Gifted, 18,*** **55-73.** The purpose of this study was to determine the effect of synectics training on the development of creativity, self-concept, and verbal skills of gifted and nongifted kindergarten students. A sample of five groups of kindergarten students (N=107) in an urban south central United States district were pre- and post-tested using the Torrance Tests of Creative Thinking, the Martinek Zaichkowsky Self- Concept Scale, and the Peabody Picture Vocabulary Tests. Identical synectics sessions were conducted in the gifted experimental and the nongifted experimental classrooms. These twenty minute sessions were held twice a week for 12 weeks. While no differences were found on the measures of self-concept and creativity between groups, the author found qualitative differences between the gifted and nongifted groups in these characteristics: higher level of abstraction, more questioning; greater range of understanding, larger vocabularies; more fluency, flexiblility, and originality. These characteristics were more frequently exhibited and developed to a greater extent with the gifted students. The author concludes that synectics training may be used in kindergarten to encourage creative growth.

Milgram, R. M., & Hong, E. (1993). Creative thinking and creative performance in adolescents as predictors of creative attainments in adults: A follow-up study after 18 years. ***Roeper Review, 15,*** **135-139.** This study examined the relationship between adult accomplishments and performance as an adolescent on measures of intelligence, school grades, creative thinking and overall leisure activities. Subjects were 67 of 159 students who participated in a study of creative thinking and creative performance conducted 18 years ago. The sample included the entire senior class of a high school in Tel Aviv, Israel. The subjects ranged in age from 34 to 36 years. The findings suggest that creative thinking and creative performance are better predictors of adult life accomplishments than intelligence or school grades. In addition, a relationship between leisure activities and adult vocation was impressive with 35% participating in similar fields.

Miller, A. I. (1998). The gift of creativity. ***Roeper Review, 21,*** **51-54.** This article compared and contrasted the early years of two geniuses: Henri Poincaré who discovered chaos theory in 1890 and Albert Einstein. Similarities and dissimilarities are discussed in how

they reacted to their education systems. While Einstein was identified as a problem child, Poincaré was identified as gifted and probably of genius caliber. Poincaré received all the opportunities available in the French education system while Einstein was not recognized until he published his paper on relativity in 1906 at age 26. Based on comparisons, the author asks teachers to consider these characteristics of mathematically gifted students: they may be poor at rote learning; they have a strong desire to find patterns; they are capable of asking teachers questions that cannot be answered immediately; and they need support. The author wonders whether or not the gift of creative genius can prevail against all odds.

Olenchak, F. R. (1995). Effects of enrichment on gifted/learning-disabled students. *Journal for the Education of the Gifted, 18*, 385-399. This study examined the effects of a highly structured, personally tailored enrichment program on the attitudes, self-concepts, and creative productivity of 108 gifted/LD youngsters enrolled in the fourth through sixth grades. The sample was administered the Arlin-Hills Survey Toward School Learning Processes, the Piers-Harris Children's Self-Concept Scale, and tallies of completed and uncompleted Type III products. Changes in attitudes and self-concept were reported for the group participating in the enrichment activities with 27 students completing Type III projects. The author concludes that the year-long treatment had positive effects on the group.

Piirto, J. (1998). Themes in the lives of successful contemporary U. S. women creative writers. *Roeper Review, 21*, 60- 70. This article examined the question: What are the themes in the lives of successful contemporary female creative writers. The subjects were 80 female creative writers, ages 30 to 65 who were listed in the Directory of American Poets and Writers. Using the analytic induction method of constant comparison, the author triangulated data through multiple sources of information including encyclopedias, directories, published interviews, published autobiographical works, and the initial questionnaires. These themes emerged: They had unconventional families and family trauma. They had teachers who discovered and encouraged their talent as writers. They read extensively at a young age and frequently had early publications. They used writing as a form of communication to make sense of things. They had lived in New York City. They attended prestigious colleges. They had high academic achievement and won many writing awards. They had a different occupation from their parents. They had conflicts combining motherhood and careers in writing. They had a history of divorce. They exhibited motivation, overexcitabilities, risk-taking, resilience, and creativity. Some developed destructive personal problems and depression. They expressed a marginalization from the mainstream. They knew how to get along in the profession. All of the writers participated in a certain creative process. Most struggled with societal expectations of femininity.

Porath, M. (1993). Gifted young artists: Developmental and individual differences. *Roeper Review, 16*, 29-33. This study examined the ways that gifted young artists are the same as or different from their average peers. Using a developmental perspective, the author collected five different art samples from 24 four year olds, 64 six year olds, 76 eight year olds, and 53 ten year olds. No significant differences were found for gender or ethnicity. Developmental patterns were evident in color use, composition, core elements in human figure drawing, and central spatial structures. Elaboration appeared to develop rapidly in a domain of talent. Giftedness was characterized by what was done with the conceptual structures such as inventiveness and expressiveness. The author concluded that gifted young artists can demonstrate their talents in different ways but not in every product. Consequently, multiple criteria should be used when identifying artistically talented children.

Reis, S. M., Gentry, M., & Maxfield, L. (1998). The application of enrichment clusters to teachers' classroom practices. *Journal for the Education of the Gifted, 21*, 310-334. This study investigated the effects of providing enrichment clusters to the entire population of two urban elementary schools. Enrichment clusters provide a regularly scheduled time for a nongraded group of students to complete a product and work with facilitators who have expertise in a shared interest area. The clusters met together for 10 weeks in one school and 12 weeks in the other school. Each meeting lasted 75 minutes and was facilitated by a teacher, community member, or parent. Data were collected through written descriptions of observations, interviews, evaluations, and questionnaires. Challenging content was integrated into 95% of the clusters using these strategies: developing products or services, using specific authentic methodologies, using advanced vocabulary, using authentic "tools," using advanced resources and reference materials, using advanced thinking and problem-solving, integrating creative thinking and historical perspectives, and developing presentations or performances. Approximately 60% of the teachers who facilitated clusters transferred some of the strategies used in clusters into their regular classroom practices.

Rogers, K. B. (1998). The class of '43 at CIT: A case study of adult creative productivity. *Roeper Review, 21*, 71-76. The author examined these questions: To what extent have the Caltech Graduates of the Class of 1943 been creatively productive? And, what factors in their lives may have accounted for this creative productivity? The subjects of this study were the 89 respondents who completed the questionnaire sent by the Caltech Alumni Association before the fiftieth reunion of the class of 1943. The response rate to the questionnaire was calculated as 90% of those alumni still living. This group of men was more likely to pursue levels of education beyond the Bachelor's degree but most gained knowledge "on the job." The men were creatively productive over the course of their lives. In general, they were mobile, physically active, and risk-taking in their pursuit of leisure. Many reported catalyzing experiences—stable families, involvement in wars, and specific experiences. The author hopes that further studies of other cohorts will examine the dynamic interplay of factors that contribute to high levels of creative productivity.

Schack, G. D. (1993). Effects of a creative problem-solving curriculum on students of varying ability levels. *Gifted Child Quarterly, 37*, 32-38. This study investigated the effects of a problem-solving curriculum on 267 middle school students in six schools who had been previously identified as gifted, honors, or average. All three groups benefited from instruction in creative problem solving by improving problem fluency, solution fluency, flexibility, originality, and use of criteria.

Schack, G. D. (1989). Self-efficacy as a mediator in the creative productivity of gifted children. *Journal for the Education of the Gifted, 12*, 231-249. This study investigated the relationship between self-efficacy as a creative producer and initiation of independent investigations in areas of personal interest. The sample included 294 students in grades four through eight who were participants in gifted programs based on the Enrichment Triad Model in eight schools. Data were collected using self-reports about projects and ratings of

self-efficacy. Results indicated that initial self-efficacy was related to final self-efficacy, and that successful completion of Type III products was related to self-efficacy. Since only 19% of the variance was predicted by the variables studied, the author identified other influences on the successful completion of creative products such as identification of a topic of interest, time available to pursue an investigation, feeling in control of other activities, quality of instruction and support within the gifted program, and expectations from others.

Starko, A. J. (1989). Problem finding in creative writing: An exploratory study. ***Journal for the Education of the Gifted, 12,*** **172-186.** This study investigated the ways that problem finding and selecting techniques in creative writing differ among professional writers, high school students with interest and ability in creative writing, high school students in above average English classes, and high school students in average English classes, and whether of not group membership can predict originality of problem finding. The sample included 34 summer writing institute students, 66 students in honors classes, 53 in average classes, and 6 professional writers. Data collection included three activities: a problem identification task, a questionnaire analysis of the problem identification task, and follow-up interviews. Results reported that all three groups used similar strategies, but that the summer institute students were more likely to tie the object to abstract ideas to examine object characteristics and less likely to have ideas just "pop out" or related to familiar movies or books than the other groups. Original students tended to use abstract ideas or themes to develop problems. While writers used similar strategies, they concentrated on the deliberate manipulation of ideas through unusual combinations and perspectives. The author concludes that teaching strategies used by professional writers may enhance creative writing.

Tallent-Runnels, M. K., & Yarbrough, D. W. (1992). Effects of the future problem solving program on children's concerns about the future. ***Gifted Child Quarterly, 36,*** **190-194.** The purpose of this study was to determine if gifted students participating in the Future Problem Solving Program would feel that they had more control over their future and different concerns than other groups of non-participating gifted or average-ability students. The sample was 139 students in grades 4-6 from a school district in the Southwest. Results indicated that gifted students who participated in FPS programs responded in a more positive manner about their roles in the future. They also mentioned world affairs, space, technology, war, school, or education more frequently than the other groups. The authors conclude that if those who participate in FPS feel that they have more control over their future, then non-gifted students might also benefit.

Torrance, E. P. (1993). The beyonders in a thirty year longitudinal study of creative achievement. ***Roeper Review, 15,*** **131-135.** The purpose of this study was to analyze some of the Beyonders in a 30-year follow-up study in creative achievement. The study was initiated in 1959 and involved the total enrollment of a high school noted for enrolling a large number of gifted students. The seniors responded to follow-up questionnaires in 1966, 1970, and 1990. Correlation coefficients between the creativity measures administered in high school and the creative accomplishments reported in adulthood ranged from .46 to .58. Using two case studies, Torrance identified characteristics of those who continued to create. They (a) love their work and things they do, (b) have a clear future-focused self-image, (c) do not limit their exploration of the field, (d) go beyond the usual scope of a problem in trying to understand things, (e) have a diversity of experience, and (f) have a persistence and high energy level.

Westby, E. (1997). Do teachers value creativity? ***Gifted and Talented International,*** **12, 15-17.** The authors were interested in studying the degree to which teachers' conceptions of creativity agree with conceptions of creativity held by researchers. Teachers were asked to rate characteristics of their favorite and least favorite students. These characteristics were rated by 35 non-education-major college students on a rating scale to determine their perceptions of the ten traits as most typical or least typical of a creative child when compared to Sternberg and MacKinnon's characteristic lists. There was a high positive relationship between the teachers' least favorite students and these characteristics. Teachers were then asked if the creative child prototype was typical of a creative child. The authors found differences in the teachers' anecdotal descriptions and researchers checklists. Teachers included "is responsible," "is good-natured," and "is sincere" as most typical of creative students while "is impulsive," "makes up the rules," "is a nonconformist," "tends not to know own limitations," "tries to do what others think is impossible," and "likes to be alone when creating something new" as least typical. The authors conclude that teachers value only some of the characteristics associated with creativity.

Zimmerman, E. (1991). Rembrandt to Rembrandt: A case study of a memorable painting teacher of artistically talented 13 to 16 year-old students. ***Roeper Review, 13,*** **76-84.** The purpose of this study was to describe and analyze characteristics of a memorable teacher of artistically talented 13 to 16 year-old students in a two-week painting course at the Indiana University Summer Art Institute. Data was collected by means of notes, tapes of five sessions, slides of classroom activities and student art work, taped teacher interviews, student registration forms, and two observer journals. The class met for 10 instructional days for two hours. The 20 painting students in the study were entering grades 8 through 11 the following fall. Teacher characteristics included an emphasis on both cognitive and affective skills—he taught skills as well as an understanding of what it was like to be like an artist. He had a sense of humor and was a model as an artist. He was knowledgeable about his subject, understood and communicated effectively with his students, and was deeply involved in teaching.

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Q&A Answers to Your Questions

Donna Corley

• I think that everyone understands creativity as it applies to the arts. What are some other ways creativity is expressed in the classroom?
Look for creativity in the classroom in how the students choose to express themselves in all areas. Look for ingenuity. Having many ideas, having different kinds of ideas, having ideas that are unique, completing and/or embellishing ideas are examples of creative behaviors.

• What do we do in the classroom that "kills" creativity?
Dr. Joyce Juntune, Texas A&M University, speaks of three roadblocks to creativity: mind-set, anxiety, and negativity. *The Creative Spirit*, a film series on creativity funded by IBM, depicts four creativity "killers" - surveillance, evaluation, reward, and competition. R. J. Talbot in "Creativity in the Organizational Context: Implications for Training," *Nurturing and Developing Creativity: The Emergence of a Discipline*, edited by Isaksen, et al, refers to the same creativity "killers" but adds "restriction of choice."

• What are some strategies to help avoid creativity killers?
Offer direct instruction regarding common roadblocks to creativity that is age and or experience appropriate and strategies for avoidance. Encouraging a gifted young person to look at things differently can enhance avoidance of mind-set. One way this viewing from alternative perspectives can be developed is through the easy to find "braintwister" puzzles that abound in gifted education publications. Relaxation techniques can reduce anxiety and support self-reflection. Team building exercises can help with negativity issues within a group and build self-confidence, which in turn aids risk taking. Offer choices that help them to make decisions. Assist gifted young people in the development of intrinsic motivation instead of extrinsic motivation.

• What are things that we can do in the classroom to nurture creativity?
To nurture creative behaviors, Talbot suggests that there are three elements that must mutually exist: "motive, means, and opportunity." In other words, we need to help gifted young people to want to be creative, have the skills necessary to be creative, and provide them with opportunities to be creative. Valuing and modeling creative behaviors help build motivation. We are all capable of being creative according to E. Paul Torrance's *Why Fly? A Philosophy of Creativity*. Starting with that premise and moving on to direct instruction in skills that enable creative behaviors create the means. Opportunities to be creative should be ordinary, everyday occurrences. Something as simple as extending opportunities for responses that do not require one "right" answer or approach is an opportunity to be creative. If a person has the skills but does not want to be creative or is not given the opportunity to be creative, he or she will probably not be creative. It has been found that even if a gifted young person wants to be creative but does not have the skills or the opportunities, it is less likely that they will be creative. It is vitally important that we help build motive, means, and opportunities for creativity equally.

• What are skills that enable creative behaviors?
The first step in teaching skills that enable creative behaviors is to teach gifted young people about the creative process itself. A good place to start is with four constructs of creativity that can be taught and measured, as identified by Torrance: fluency, flexibility, originality, and elaboration. Encourage them to have many ideas, different kinds of ideas, ideas that no one else might think of, and teach them to bring ideas to completion. Teach them to share ideas with others if they wish to trigger ideas or build onto others' ideas, and remember to teach them to take time for self-reflection. Model appropriate brainstorming techniques that demonstrate the withholding of the evaluation stage until the collection of ideas has been completed. Teach them to evaluate appropriately and most of all teach them that discipline within the creative act is important. An idea that is not meaningful or "adaptive," as Dr. Howard Gardner puts it, if it is of no practical benefit. Create a safe environment so that students feel comfortable and encouraged to take risks.

• If a person is gifted, does that mean that she/he will automatically be creative?
Isaksen and Murdock in "The Emergence of a Discipline: Issues and Approaches to the Study of Creativity," *Understanding and Recognizing Creativity: The Emergence of a Discipline*, edited by Isaksen, et al, discusses an observation from the early work on intelligence testing. They found that success on tasks that required ingenuity could not be accurately predicted from intelligences test scores alone. Measures of creativity then moved to the realms of cognitive style as opposed to just intelligence alone. We also need to remember that we all have the ability to be creative. We need motive, means, and opportunity to reach our creative potential.

• Are there any organizations devoted to creativity?
Yes. You can contact one at the following address: American Creativity Association, P. O. Box 26068, St. Paul, MN 55126-0068. Their phone number is (612) 784-8375 and the fax is (612) 784-4579. They have annual conferences. Memberships are opened to anyone interested in advocacy of creativity.

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Book Reviews

***Curriculum Development and Teaching Strategies for Gifted Learners.* (1995). by C. June Maker and Aleene B. Nielson. Pro-Ed.**

Maker and Nielson combine the principles of the first edition with the changes that have occurred over the last twelve years to develop an even more useful text. This second edition (a companion volume to Maker and Nielson's *Teaching Models in Education of the Gifted*, reviewed in the Fall 1998 issue of *Tempo*) also reflects the current views of the various forms of giftedness and the many ways giftedness is exhibited. This information is particularly important and parallels the *Texas State Plan for the Education of Gifted/Talented Students*. The authors create tables, charts, and curriculum examples that are easy to synthesize with the TEKS. With its focus on the constructionalists, the text contrasts the traditional product orientation and the process orientation. With the "user friendly" charts/tables, a classroom instructor can apply the text's information efficiently.

The book begins by reviewing studies of gifted and and overview of the concepts and principles covered later chapters. In a coherent and sequential manner, the text addresses specific principles for the gifted such as learning environment and content/process/product. The second part of the book is about the application of curriculum principles. This text has a higher level of curriculum examples than the first edition. On a scale of one to five, this book is a four plus.

— review by Towana Wilson

. . . . . .

***Understanding Those Who Create*, 2nd ed. (1998). by Jane Piirto. Gifted Psychology Press.**

This new edition of Piirto's book again makes creativity understandable from a variety of perspectives. In a clear, concise fashion, she has synthesized research and approaches to creativity training. Topics include the nature and measurement of creativity, types of creatively gifted, and means for encouraging, enhancing, and nurturing creativity, especially during childhood. She improves her previous work with added research on the paths of entrepreneurs, popular musicians, conductors, architects, and athletes. Each of the twelve chapters concludes with a list of summary statements crystallizing insights in that chapter - an excellent resource for those who use the book to teach about creativity.

In addition, the book

- synthesizes research, and makes creativity understandable in down-to-earth fashion;
- distinguishes types of creatively gifted who show distinct life pattern differences;
- discusses creatively gifted artists, writers, scientists, musicians, entrepreneurs, actors, and dancers;
- emphasizes biographies, autobiographies, memoirs, and psychological studies;
- specifies factors in Piirto's Pyramid of Creativity which lead to creativity;
- summarizes historical development of theories of creativity in various domains; and
- provides strategies for parents and teachers to nurture creativity in children.

The distinctive life patterns of gifted individuals are explored in this book along with ways to enhance and nurture creativity, especially in children. Adults who struggle with creativity in their children or themselves will find help in this book.

. . . . . .

***Handbook of Creativity*. (1999). by Robert J. Sternberg, ed. Cambridge University Press.**

In this volume, Robert Sternberg has assembled an impressive collection of articles from experts in the behavioral sciences, including Teresa Amabile, Mihaly Csikszentmihalyi, Howard Gardner, and Joseph Renzulli, among others. The twenty-two chapters are arranged in the following sections: introduction (which sets out the major themes); methods for studying creativity; origins of creativity; creativity, self, and the environment; special topics in creativity; and the conclusion (which summarizes the previous chapter).

While the articles are all excellent and informative, several are of particular interest to teachers and parents. Raymond S. Nickerson's article, "Enhancing Creativity," addresses a number of important issues relating to the theory, research, and practical means to increase creative potential. Sternberg and O'Hara address the link between creativity and intelligence. For those interested in brain research, Colin Martindale's "Biological Bases of Creativity" discusses research and implications. Cultural differences in creativity are investigated by T. I. Lubart's "Creativity Across Cultures." Also of particular value is the concluding chapter by Richard E. Mayer, "Fifty Years of Creativity Research," which provides a thoughtful and detailed overview of research.

This scholarly book will be an invaluable addition to the library of anyone interested in creativity and/or gifted education.

Publications of Interest

Texas Higher Education Coordinating Board
Governmental Relations/Public Information Office
P. O. Box 12788, Austin, TX 76711-2788

Where can educators find up-to-date information on the new high school graduation plans, reliable information on college admissions criteria, and unbiased information on selecting a college or university? The Texas Higher Education coordinating Board offers all of this information in print and electronically via the internet.

The Coordinating Board, the state's highest authority in higher education, publishes four helpful booklets that can answer many questions that students (and educators) ask about college.

Educational Opportunities at Texas Public Universities and *Educational Opportunities at Texas Public Community and Technical Colleges* list the degrees available at each public institution of higher education in Texas. Both also include admission requirements, a map of institutions, and a useful listing of degree programs by subject. *Planning for College Admission: Advice for High School Students* lists the high school course requirements, plus SAT and ACT test scores required for admission at Texas' public universities. A new publication, *Are You Ready for the Real World?*, is a high school course planning guide in an eye-catching, easy-to-keep folder. The planning guide includes the Recommended High School Program, the Distinguished Achievement Program, and the Tech-Prep program. The folder fits into a three-ring binder and gives students a place to keep college admissions and financial aid information, as well as important names and telephone numbers.

High school students, teachers, counselors, and parents reviewed these publications while they were being developed to help ensure that they are easy to understand and easy to use.

The Texas Higher Education Coordinating Board provides complimentary copies on request. However, because of the high demand for these publications, they are available in bulk quantities—at the cost of printing, plus postage and handling.

These publications are also available on the Coordinating Board's web site at *www.thecb.state.tx.us*. We are advised that you should feel free to print as many copies from the web site as you like; however, please credit the Coordinating Board as the source.

. . . . . .

***High Ability Studies*, The Journal of the *European Council for High Ability*, Carfax Publishing Ltd., 875-81 Massachusetts Ave., Cambridge, MA 02139**

Have you ever wondered how Finland meets the needs of gifted and talented children? Did you know that in Jordan a computerized identification procedure has been developed? Were you aware of the project at Ostrava University (Czech Republic) for developing the creativity of future teachers? If you are interested in keeping up with recent developments in gifted education in Europe, try this journal. Its purpose is to provide a forum for the expression of ideas on the development of high ability across the lifespan. It publishes refereed theoretical and empirical papers in English on both practice and research, reviews of the literature, descriptions of projects and special measures, reports on the results of original research, book reviews, etc. High ability is understood not only in the intellectual sense, but also in sport, fine arts and music, and other domains in which gifts manifest themselves.

Other recent articles include "Factors Influencing the Realization of Exceptional Mathematical Ability in Girls: An Analysis of the Research," "Teaching Teachers for Creativity," and "Gifted Athletes and Complexity of Family Structure: A Condition for Talent Development?"

Examining the Boundaries of Creativity

Michael W. Cannon

When the sculpture inched across the floor, it was surprising. And when another exhibit looked back at me, it was disconcerting. But when two statues start conversing, I knew that as far as my previous ideas of art, I was not in Kansas any more. This was not just creativity, but creativity that looked back at you.

These surprises came at an exhibit of Alan Rath's robotic constructs at the Austin Museum of Art. Robots as sculpture is an idea that expands the limits of what is expected of the medium. Traditional sculpture, such as the statue of Abraham Lincoln in the Lincoln Memorial, is often monumental. It may also be startling, as René Magritte's surreal bronzes, or even amusing creations like Claes Oldenburg's soft sculptures. Even with the many variations in the medium, sculpture usually behaves itself.

COURTESY Austin Museum of Art

One Track Mind, 1998

Rath's robotic constructs, while reminding the viewer of the natural world of plants, animals, and people, are bare aluminum, cables, cathode ray tubes, wheels, pulleys, sensors, and computers. The mechanical nature is not hidden, but exposed, and a part of the experience.

For example, "Rover" is a wheeled vehicle that roams around its gallery when activated by human movement. Other exhibits have robots that react with each other. "One Track Mind" consists of two crane-like constructs, each with a single multi-jointed arm. Using sound waves, they respond to the movements of each other, sliding along tracks, arms raised and lowered, seeming to argue, dance, shake hands, or wave. Previous conceptions of sculpture are reexamined, revised, or even discarded when confronted with this creative approach to the medium.

The field of creativity is something like that of sculpture. We have an idea of what is meant by creativity, even if it would be difficult to define succinctly; it is one of those "I-know-it-when-I-see-it" ideas. If interactive robots are not a part of your idea of sculpture, then you will either have to broaden your idea of art, or reject the artistic legitimacy of the exhibit. In judging the creativity of student work, something similar happens.

Armed with some idea of what creativity means, the teacher assesses the product or performance that meets the criteria. Confronted with a hallway transformed into a rain forest with trees and trailing vines, many gush, "How creative!", when the actual student work may have been no more original than filling in worksheets. The project may be very enriching for the teacher, but offer little opportunity for student creativity. Real creativity may reside just as much in a thoughtfully written essay or a well-conducted survey.

Soften the boundaries of your definitions of the creative in student work. Creative ideas often hide in the most unusual places, in forms that we least expect it. And if something creative waves at you, wave back.

Winter 2000
Leadership

Developing and encouraging leadership is one of the mandates for gifted education. Articles can address issues of identification, specific programs (especially summer institutes and after school programs), leadership strands in general gifted programs, female leaders, minority concerns, as well as general or theoretical discussions of the topic.

The deadline for submission of articles is **September 1, 1999.**

Spring 2000
Evaluation and Assessment

Assessment and evaluation are recurring processes in gifted education, whether in identification, programs and curriculum, or student performance. Articles addressing the evaluation and assessment of students in gifted programs, evaluation of programs and/or curricula, assessment elements of identification are only some of the possibilities for contributors.

The deadline for submission of articles is **December 1, 1999.**

Guidelines for Article Submissions

***Tempo* welcomes manuscripts from educators, parents, and other advocates of gifted education. *Tempo* is a juried publication, and manuscripts are evaluated by members of the editorial board.**

Please keep the following in mind when submitting manuscripts:

1. Manuscripts should be between 1000 and 2500 words on an upcoming topic (see topics above).
2. Use APA style for references and documentation.
3. Submit **three copies** of your typed, double-spaced manuscript. Use a 1 1/2 inch margin on all sides.
4. Attach a100-150 word abstract of the article.
5. Include a cover sheet with your name, address, telephone and (if available) FAX number and e-mail address.

Send all submissions or requests for more information to:

Michael Cannon, TAGT Editorial Office, 5521 Martin Lane, El Paso, TX 79903

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TEXAS ASSOCIATION FOR THE GIFTED & TALENTED

Tempo

TEXAS ASSOCIATION FOR THE GIFTED AND TALENTED
Member, National Association for Gifted Children (NAGC)

Volume XIX Issue 4

Successful Intelligence and the Gifted

During a visit to Jamaica, I had the opportunity to visit several elementary schools in relatively poor areas of the island The physical layout of the schools was different from that to which most of us are accustomed. The schools were large, one-room schoolhouses. Teachers and their students were arrayed around the room, usually with no partitions separating one class from another. Thus, students got to listen not only to their own teacher's lecture, but to all the other teachers' lectures as well. If students had the misfortune to sit near the side or back of the class, the students often could hear another teacher better than they could hear their own. Indeed, it was a challenge to make out what their own teacher was saying.

I found myself reflecting on the problem posed to Alfred Binet, the father of intelligence testing, almost a century ago. If one wished to construct tests to predict school achievement, what kinds of tests might one construct? I decided that, in the Jamaica setting, two of the most useful kinds of test items would measure not skills like vocabulary or arithmetic or spatial visualization—the kinds of things Binet measured—but auditory acuity and auditory selective attention. One needed auditory acuity to hear what the teacher was saying, and auditory selective attention to filter out the teachers whose voices competed with one's own teacher. The test would probably predict school achievement well, because instruction and even most testing were conducted in the same setting, so that one would need the same skills to do well on an auditory ability test, in the classroom, and on orally administered tests of achievement. Binet was seeking to identify low performers, but perhaps the Jamaican Binet would be seeking to identify high performers. He dutifully might seek out those

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From the President

The Bottom Line

Colleen Elam

Today and tomorrow, each and every child deserves. . .

- to receive individualized academic instruction aimed directly at his or her level at that moment in time;
- to maximize personal strengths and abilities and to shore up personal weaknesses;
- to be allowed and encouraged to proceed at his or her individual pace;
- to be taught by trained, dedicated, professional teachers;
- to learn in the least restrictive and the most nurturing environment;
- to work with the best and most appropriate materials.

In order to achieve this. . .

- the general public must understand and support the benefits of maximizing the potential of every child through individualized education;
- the legislators, administrators, and trustees must perceive first-hand the ramifications of their regulations on real children in real classrooms with real teachers;
- the parents and educators must bond in partnership and trust;
- the community must act together to ensure that everything that can be done is being done to enhance education.

This is an investment in our future. Any compromise is too expensive.

Together, as a community, we can achieve this noble goal. In this century our educational services have progressed more rapidly than at any previous time in the history of mankind thanks to hundreds of unsung heroes who have dedicated their lives to children and education.

Thank you to all of you teachers who have poured your hearts and your souls into your teaching. Thank you for your late hours, your unwavering devotion, and your personal sacrifices. Thank you for looking into the faces of your precious charges and recognizing their individuality and discerning their needs. Thank you for caring. Thank you for teaching.

(see ELAM, page 30)

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Volume XIX Issue 4 Fall 1999

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Bridging the Past and the Future

Connie McLendon

It was 10 years ago this September that I wrote my first column for *Tempo*. Looking back, I recall what concern I had about that first communication. I really struggled to find words that would let the membership know that I could be counted on to lead the organization in its mission for gifted and talented students. Though great at the time, my anxiety was tempered by an eagerness to begin work. The experience would turn out to be the professional ride of my life.

The year was 1989. I was succeeding Laura Allard as executive director of TAGT-that alone a daunting task. Laura and Texas' first director of gifted education Ann Shaw, supported by the TAGT membership, only recently had maneuvered passage of the gifted education legislation-a feat of considerable consequence I would learn in the years that followed. With Laura's retirement in 1989 and Ann's only a few months later, it fell to me, still new to the job, the responsibility of advocating the development of rules and guidelines for local districts to begin implementing the gifted education mandate by school year 1990-91. Much easier said than done!

Suffice it to say that my first two years with TAGT were fraught with one political challenge after another. Texas Education Agency (TEA) staff and the TAGT leadership collaborated on developing the rules and rewriting sections of the state plan to conform to the gifted education mandate. Both the rules and the state plan were scheduled for adoption by the State Board of Education (SBOE) in the fall of 1990. Over a period of several months, TAGT was called on repeatedly to testify on the rules and the state plan before each was finally adopted in 1990. The State Board readopted the rules in 1991-which required more testimony-and again in 1996, necessitated by the gifted accountability legislation in Senate Bill 1, from 1995.

> As we approach the new millennium, the need for a strong and courageous TAGT will be greater than ever.

Déjà Vu . . . SBOE Reviews Rules for Gifted

The year is 1999. I am in the waning months of my tenure with TAGT; once again, we are approving State Board rules for gifted education. Texas law requires a four-year sunset review cycle for all state agency rules; therefore, gifted/talented rules are up again, the last adoption being in May, 1996. The review of 19 TAC Chapter 89, Adaptations for Special Populations, Subchapter A, Gifted/Talented Education, will be presented for adoption at the November, 1999 SBOE meeting. The 1996 rules were used as the foundation of the *Texas State Plan for the Education of Gifted/Talented Students*. Approved in 1997, the State Plan represents a major milestone in gifted education, forming the basis of gifted program accountability established by Senate Bill 1. Current rules have been used for two years on District Effectiveness and Compliance (DEC) monitoring visits to assess services for students in gifted education programs. With the most frequently cited indicator in gifted education being the one relating to the hours of professional development required for teachers of the gifted, TAGT is recommending a change in current rule for the November adoption.

More significantly, reports from DEC monitoring of all programs for the past two years show that G/T 17 (the g/t teacher training indicator) is the second most frequently cited indicator overall. Furthermore, reports from the field indicate that monitoring visits have resulted in improvements in those programs scheduled for DEC visits. Thus, TAGT, in collaboration with TEA, is recommending that the minimum 30 hours of training for teachers who are responsible for providing services that are part of a program for gifted students must be completed prior to providing services in the program. A teacher without the 30 hours would have one semester to complete the required training. Until such time as the state may require professional certification of teachers of gifted/talented students, as it does now for teachers of other special populations, the 30 hours

(see MCLENDON, page 31)

In Praise of a Mighty Builder

Wayne Craigen

In an article I wrote in 1997 reflecting on the past twenty years of gifted education in Texas, I recalled a story in Oakley and Krug's *Enlightened Leadership* about three men laying brick at a worksite. In interviewing the three men about their jobs, the first man stated he was laying brick and the second man said he and other construction people were putting together the east wall of a structure. However, the third man being interviewed said, "I'm helping to build a cathedral, and someday right where we are standing, the spires will rise high above us, and people will be meeting to worship and be educated."

For the past ten years, the Texas Association for the Gifted and Talented has been fortunate to have a cathedral builder at the helm, or as authors Oakley and Krug describe them, one who "has bought in and become aligned with a powerful purpose and vision." We have been blessed with the presence of Connie McLendon, our Executive Director, as our builder.

Ten years ago, upon the retirement of our first Executive Director, many of us wondered not only who could take her place, but who would have the vision to lead us effectively into what would be unchartered territory. As a member of the search committee for a new executive director, I remember how impressed we were as Connie unfolded for us the ways in which she saw the organization growing and becoming more sophisticated. Today, as I reflect upon our recommendation to the Board to acquire her services for the organization, I don't think there was one member of that committee who even dared dream where she would really lead the organization in the next decade.

Connie McLendon is the type of person who did dare to dream, who saw that we really are building an awe- inspiring cathedral which thanks to her will be viewed with the style, respect, and sincerity it deserves. She has done this because Connie herself is the epitome of style, respect, and sincerity.

The words "gifted and talented" can sometimes be difficult to define, yet we all know when we have met a "gifted" person; so it is with the word, "style." Upon your first meeting with Connie you know you are in the presence of someone with impeccably good taste, someone who encourages people to be their very best. When you are in her company, you know you are seeing "style" in action.

Because of her capability to assess the needs of TAGT and to recognize those who possessed the necessary qualities of leadership, she led TAGT in designing a strategic plan, and she saw that the officers and Board could execute the plan. She enlisted the help of leaders in many fields, including legislative members, to assist in this vision, thus gaining for TAGT the respect it commands today.

While accomplishing these complex tasks, she never forgot the human factor, the sincerity, if you will, that must be present if you are to lead others to support your cause, and to do so comfortably. The sincerity of her passion for meeting the needs of gifted/talented students is a part of her being and its glow has inspired many of us to work even harder.

"The sincerity of her passion for meeting the needs of gifted and talented students is a part of her being and its glow has inspired many of us to work even harder."

As Connie prepares to retire from her position, certainly we will all feel the loss of her day-to-day presence. Yet, let us learn from our wonderful cathedral builder. Let us look at the bricks made walls that inspire us and others to view our structure with the respect, warmth and sincerity it so richly deserves. This is not the time to look downward or to merely see bricks or walls, but it is the time to look upward at this magnificent piece of construction and to continue to share the vision of what it ultimately can become.

Connie, we thank you for sharing your vision with us. We will remember all your strengths and we will hope to continue growing our structure with style, warmth, and sincerity so that our goals for the gifted and talented may be met.

You are simply, "not simplistically," the best!

Wayne Craigen is a Past-President of TAGT. He is currently Coordinator of Advanced Academic Services for Austin Independent School District

The Role of Authentic Learning in Developing Gifts and Talents: *A How-To Guide*

Joseph S. Renzulli

One of the goals of gifted education is to provide young people who display superior interests and potentials with opportunities to apply past and present learning to real life situations. The acquisition of advanced levels of knowledge, higher order thinking skills, and the investigative techniques of the practicing professional take on relevance and true meaning when young people can actually apply these skills to problems they consider to be personally meaningful. I call this kind of experience authentic learning, and through a vehicle called enrichment clusters, a set of guidelines has been developed to help teachers organize these kinds of experiences for small groups of students. We have experimented with the enrichment cluster concept in a variety of elementary and middle schools, many of which serve economically diverse student populations. Our research found that with a relatively small amount of training, much of which is reflected in the guidelines that follow, teachers developed learning experiences that go beyond the didactic or acquisition-of-information model that is so prevalent in general education. Our research also found that challenging content, authentic methodologies, and advanced thinking and problem solving strategies were used by the vast majority of teachers who applied this method for promoting the gifts and talents of young people (Reis, Gentry, & Maxfield, 1998). Before describing the steps for developing an enrichment cluster, a brief discussion will deal with the age old question of what makes a problem real, and the role that real problems play in authentic learning.

> "The principal goal of education is to create men and women who are capable of doing new things, not simply repeating what other generations have done."
>
> —*Jean Piaget*

Authentic Learning and Real-Life Problems Defined

Two key concepts that definine authentic learning are application and real problems. Authentic learning consists of applying relevant knowledge, thinking skills, methodological techniques, time management strategies, and interpersonal skills to the solution of real problems. In order for a problem to be considered a real-life problem (as opposed to a prescribed, presented problem) it must have four characteristics. First, a real problem requires a personal frame of reference for the individual or group pursuing the problem. In other words, the problem must involve an emotional or internal commitment in addition to a cognitive or scholarly interest. For example, stating that global warming or urban crime are "real problems" does not make them real for an individual or group unless they decide to do something to address the problem.

A second characteristic of real problems is that they do not have existing or unique solutions for persons addressing the problem. If an agreed-upon solution or prescribed strategies for solving the problem exist, then it is more appropriately classified as a "training exercise." Even simulations based on approximations of real-world events are considered training exercises if their main purpose is to teach predetermined content or cognitive or affective processes. The same is true for thinking skill exercises or activities that are called "problem based learning," if such activities begin with a teacher or text book selected problem and/or they have a relatively established plan of attack for problem resolution.

The third characteristic of a real problem is best described in terms of why people pursue these problems. The main reason is that they want to create new products, services, or information that will change actions, attitudes, beliefs, values, or appreciations on the part of a targeted audience. For example, a group of young people who gathered, analyzed, and reported on data about television-watching habits in their community were contributing information that was new, at least in a relative way, and that would cause people to think critically about the television-viewing actions of young people.

The final characteristic of real problems is that they are directed toward a real audience. Real audiences consist of persons who voluntarily attend to information, events, services, or objects. A good way to understand the difference between a real and a contrived audience is to reflect on what one group of enrichment cluster students did with the results of a local oral history project dealing with the "biographies" of historically significant buildings in their town. Although they presented their findings to classmates, they did so mainly to rehearse presentation skills. Their authentic audience consisted of members of a county historical society and persons who chose to read about their research in the features section of a local newspaper.

To understand the essence of authentic learning is to compare how learning takes place in a traditional classroom with how someone might learn new material or skills in real-world situations. Classrooms are characterized by relatively fixed- time schedules, segmented subjects or topics, predetermined information and activities, tests and grades to determine progress, and an organizational pattern largely driven by the need to acquire and assimilate information and skills imposed from outside the classroom.

Contrast this type of learning with the more natural chain of events that takes place in real-world situations including research laboratories, business offices, or film studios. In these situations, the goal is to produce a product or service. All resources, information, schedules, and events are directed toward this goal, and evaluation (rather than grading) is a function of the quality of the product or service as viewed through the eyes of a client or consumer. Looking up new information, conducting experiments, analyzing results, or preparing a report is focused primarily on the present rather than storing it for a distant future. And it is these more enduring structures that have the greatest amount

of transfer value for future use. When content and processes are learned in authentic, contextual situations, they result in more meaningful uses of information and problem-solving strategies than the learning that takes place in overly structured, prescribed classroom situations. If persons involved in authentic learning experiences are given some choice in the domains and activities in which they are engaged, and if present experience is directed toward realistic, personalized goals, this type of learning creates its own relevancy and meaning.

The Assembly Plant of the Mind

Authentic learning consists of investigative activities and the development of creative products in which students assume roles as first-hand investigators, writers, artists, or other types of practicing professionals. Although students pursue these kinds of involvement at a more junior level than adult professionals, the overriding purpose is to create situations in which young people are thinking, feeling, and doing what practicing professionals do in the delivery of products and services. These experiences should be viewed as vehicles through which the following five objectives can be achieved:

- To provide students with opportunities, resources, and encouragement to apply their interests, knowledge, thinking skills, creative ideas, and task commitment to self-selected problems or areas of study.
- To acquire advanced-level understanding of the knowledge and methodology used within particular disciplines, artistic areas of expression, and interdisciplinary studies;
- To develop authentic products or services that are directed primarily toward bringing about a desired impact on one or more specified audiences;
- To develop self-directed learning skills in the areas of planning, problem finding and focusing, organizational skills, resource utilization, time management, cooperativeness, decision making, and self-evaluation; and
- To develop task commitment, self-confidence, feelings of creative accomplishment, and the ability to interact effectively with other students and adults who share common goals and interests.

Authentic learning should be viewed as the vehicle through which everything, from basic skills to advanced content and processes "comes together" in the form of student-developed products and services. In much the same way that all the separate but interrelated parts of an automobile come together at an assembly plant, so, also, do we consider this form of enrichment as the assembly plant of mind. This kind of learning represents a synthesis and an application of content, process, and personal involvement. The student's role is transformed from one of lesson-learner to first-hand inquirer, and the role of the teacher changes from an instructor and disseminator of knowledge to a combination of coach, resource procurer, mentor, and, sometimes, a partner or colleague. Although products play an important role in creating authentic learning situations, a major concern is the development and application of a wide range of cognitive, affective, and motivational processes.

Enrichment Clusters

As indicated earlier, our experience with schools has shown that we can guarantee authentic learning experiences for students if the overall weekly schedule devotes some time focused exclusively on the kind of learning just discussed. During enrichment clusters, non-graded groups of students come together for approximately one-half day per week because they share common interests that bind them together. They also share a willingness to work cooperatively within a relatively unstructured learning environment that does not have a pre- planned set of lesson plans or a unit plan. Information collected in student portfolios (Purcell & Renzulli, 1998) assists students in making decisions about the general area(s) in which they might like to work.

• How It Works

The guidelines for enrichment clusters are easy to follow. First and foremost, all cluster activity is directed toward the production of a product or service. A series of start-up activities help students find and focus a problem that the majority of the group wants to pursue. The facilitation of an enrichment cluster can be illustrated by following a group of students who started "The Video Production Company." Students selected this cluster because of their interest in the medium of video and its impact on audiences. The teacher who coordinated this cluster was familiar with the operation of simple video equipment and she also knew community persons who would volunteer assistance in this area. This cluster quickly became interdisciplinary in nature.

The guidelines for enrichment clusters are easy to follow. First and foremost, all cluster activity is directed toward the production of a product or service.

Product development required that students deal with scripting, story boarding, drama, set design, costumes, cinematography, and video editing. A unique feature of clusters is that everyone does not do the same thing. There is a division of labor that models real-world productivity, and everyone contributes in his or her own area of specialization. The group is connected by a common purpose, but each person is special because of the unique contribution that he or she makes to the overall enterprise.

• Initial Questions

The initial meetings of the Video Production Company focused on answering a series of the key questions raised by practicing professionals in any field (see page 22s.). Rather than providing students with answers to these questions, the teacher organized and guided but did not dominate the exploration process. General exploratory experiences took the form of guest speakers, displays of typical products from the field of video production, and videos of cinematographers at work who describe the products and services that characterize the field of study. A library trip organized around a scavenger hunt helped students broaden their perspective about the products and process involved in different genre of video production.

Students discovered "How-To" books that provided valuable sources of methodological information. Brainstorming and webbing techniques helped students identify what they knew and what they were eager to discover. Mutual interests are a good starting point for accelerating motivation and promoting harmony, respect and cooperation among group members. Individual interests led to students interviewing local professionals and obtaining career-related literature from professional societies and associations. Resource people ranged from teachers and students involved in a local community-college communications program, to professionals at the local television station.

Once students understood what professionals in video production

do, they decided on a project with common interest to the group. Problem finding and focusing is a crucial step, because the nature of the project or service will drive the rest of the investigation. Students may use their own interests to develop a documentary or fictional work, or they may opt to market their services to the student council, athletic association or parent-teacher association and make a school-orientation video or video-yearbook for the school. The enrichment cluster may divide into subgroups based on product selection. In the case of the Video Production Co., they decided to do an all-purpose program about activities taking place in the district's schools. Features such as Kindergarten Corner, the Inventors Forum, and the Science Connection were interspersed with general school news and interviews with students and teachers. The program aired weekly on the local cable-access television station.

• The Teacher's Role

As the facilitator of the cluster, the teacher helped students select challenging projects, develop story boards and shooting schedules, and make arrangements for transportation and cooperation with other teachers. She also helped identify the jobs to be done, obtain the required resources, and develop an action plan. The teacher worked with the group on developing interpersonal skills, running effective meetings, and developing time-management skills. These activities should be student- driven, with the teacher playing an advisory role.

Wherever possible the teacher should encourage students to imitate the roles and responsibilities modeled by actual professionals working in the field of video production. This division of labor allows all students to have ownership of a component of the production and to find a niche that compliments their individual abilities, needs, and interests. Each person's specialty is valuable because of the essential contribution it makes to the whole.

At all times the role of teacher is to coach, support and escalate the level of the performance to a higher level. Like any coaching position, teachers will quickly develop the experience to predict the problems and needs of the group before they arise. This requires a great deal of patience and restraint. Facilitators must allow students to experience frustration and struggle to turn setbacks into successes. Students must own the problem if they are ultimately to own the satisfaction of their success. As the work of the Video Production Co. evolved, the teacher helped students run company meetings and assess their progress.

Assessment and evaluation are integral parts of product development, but evaluation should not be imposed from outside. Students should select criteria that they feel are important and judge their work against them. Assessment should be reflective, and the enrichment cluster should provide an atmosphere in which students feel comfortable taking creative risks. Product development should always be viewed as "a work in progress," and feedback should be used to improve the quality of the product. The ultimate evaluation is always a function of viewer feedback. When a product is complete, time should be taken to celebrate its success before moving on to the next project.

Two Key Issues In Developing Enrichment Clusters

1. Enrichment Clusters Are Not Mini-Courses!

One of the major problems we have encountered in our research on the enrichment cluster concept is a tendency on the parts of some facilitators to turn the clusters into mini-courses. Mini-courses are designed to teach a prescribed set of content or thinking skills to students. They may differ from regular instructional units in that they deal with topics not ordinarily covered in the regular curriculum, and they may use teaching strategies that are different from traditional recitation, drill, and testing practices. The ultimate purpose of a mini- course is to "put into the heads of students" a pre-selected set of content and/or process objectives. While this is not an unworthy goal (indeed, such is the make-up of most school learning experiences), we have something different in mind when it comes to the central purposes of an enrichment cluster.

An enrichment cluster is a learning situation that is purposefully designed to produce a product or service that will have an impact on an intended audience. All learning that takes place within a cluster, whether that learning is new content, new or improved thinking processes, or new interpersonal skills is what John Dewey called collateral learning. In other words, students learn new material within the context of a real and present problem. We purposefully avoid pre-specifying content or process objectives because we want students to follow the investigative methodology of practicing professionals in the real world. If we approached clusters by pre-specifying what and how students are going to learn, we would be returning to teaching practices that are typical of regular instruction.

Planning an enrichment cluster is, in many ways, an easier and more natural process than planning for traditional teaching. We need only determine (through discussions with students) a product or service and an intended audience, and then take the steps necessary to acquire the resources and know-how needed to produce the product or deliver the service. Whatever information, materials, problem solving skills, or assistance we need automatically becomes relevant because we require it to produce the product or deliver the service. Imagine for a moment all of the things about arithmetic, geometry, geography, architecture, purchasing, aesthetics, computer graphics, advertising, photography, accounting, cooperativeness, leadership, and ornithology that a group of middle school students learned simply by deciding that they wanted to design, construct, and market "environmentally friendly" bird houses and feeders. And notice how this topic became naturally interdisciplinary, rather than having to artificially incorporate related disciplines.

Although enrichment clusters are modeled after natural (non-school) learning, a good deal of our teacher training taught us that we must begin by "first stating our objectives and learning outcomes," and then "design lessons to achieve these objectives." This traditional approach to pedagogy is a difficult habit to break. We hope that the suggestions that follow will serve as a guide for using an inductive approach to pedagogy rather than the prescribed/presented approach that typifies most regular curriculum and mini-course activities.

2. Hands On Should Not Mean Brains Off!

A second problem we encountered in our research on enrichment clusters is a failure on the parts of some facilitators to escalate the level of knowledge pursued within a cluster. We have observed many exciting, fun-filled activities, and this kind of enjoyment of learning is unquestionably one of the most desirable features of a good cluster. At the same time, some critics have said that certain clusters are nothing more than "fun-and-games," and others have said that the clusters are "soft on content," that they don't represent "real school." We can guard against these criticisms by examining each cluster with an eye toward what constitutes authentic and rigorous content within the field or fields of study around which the cluster is organized. For example, in the cluster on bird houses and feeders mentioned above, the teacher/facili-

(see RENZULLI, page 20)

Toward the Next Generation of Programming for Talent Development

Donald J. Treffinger, Grover Young, Carole Nassab, and Carol Wittig

As we approach the millennium, we have the opportunity to begin working on a new vision for education for talent development. We can (and surely must) appreciate and learn from nearly three decades of theory, research, and practice. But just as certainly, we must also be alert to new opportunities, challenges, and directions. In preparation for the "next generation" of education for talent development, we must continue to engage in careful planning and on-going review and evaluation. In addition, we will need to make explicit commitments to both continuous improvement (doing better the best of what we are already doing) and innovation (doing what we have not previously done). Exemplary programming for the millennium will not come about by chance, nor by inertia.

What basic principles and convictions might shape and guide our efforts for the improvement and innovation challenges ahead? The following statements represent possible "fundamental tenets and beliefs" (adapted from Treffinger, 1989; Treffinger & Feldhusen, 1997; and Treffinger, Young, Nassab, & Wittig, in preparation). We hope they will provide a starting point for discussion, reflection, and research on which sound programming might be based in the future. We invite your responses, and we would look forward to opportunities for discussion and exploration of these principles and their implications.

1. All students have worthwhile potentials and interests. Appropriate and challenging instruction can lead to significant achievement and satisfaction in at least one (or often more) talent areas for many students. Talents exist and may be expressed and developed in many important worthwhile domains.

2. Some students show advanced levels of talent and accomplishment very early in their lives. With sustained effort, encouragement, and support, many students will continue to pursue the development and expression of their strengths and talents and thus may eventually attain a very high level of excellence and accomplishment.

3. Talent development is lifelong and fundamental to personal growth and healthy development. As children mature, previously unrecognized strengths and talents ("hidden potential") often emerge and talents may also become more specific, focused, and sustained.

4. New opportunities enable talents and interests to change, grow, or emerge over time. We can affirm talent when we see it, but we should not declare that it does not exist if, at any single instance, we do not see it. (Lack of evidence *now* is not necessarily evidence of lack *forever*.)

5. Creative productivity, which occurs through both individual and group efforts, is commonly manifest by quality products that are shared with appropriate audiences.

6. Moving toward creative productivity in any domain involves a constant struggle for balance between *playfulness* (openness to experience, a sense of curiosity, and exploration, risk-taking, and "toying" with possibilities) and *rigor* (disciplined inquiry, hard work, and extended effort).

7. A person's learning style provides powerful information about how her or his strengths and talents can best be expressed and used and also provides a basis for "appropriate and challenging" instruction.

8. Nurturing talent potential is far more important for educators than simply *categorizing, labeling, or sorting.*

9. Talent development occurs in an "ecosystem of development." Appropriate and challenging programming occurs in settings or through agencies outside the school and requires the commitment and support of the home and community as well as the school.

10. Home, school, and community all contribute to deliberate efforts to recognize students' emerging strengths, talents, and sustained interests. We must be talent spotters in order to become talent developers.

11. Participation in activities or experiences in which various talents can be expressed and used can be effective starting points for talent recognition and development.

12. Talent development requires significant personal ownership and investment, sustained effort, discipline, commitment, and work ethic on the part of the individual as well as resources, support, and encouragement from others.

13. Effective programming for talent development involves many and varied resources and levels of service. These support, extend, expand, or enhance, rather than supplant, the daily school program.

14. Appropriate and challenging educational experiences are fundamental responsibilities of the school, not "privileges" or special activities.

15. Programming activities in six areas (individualized basics, appropriate enrichment, effective acceleration, independence and self direction, personal growth and social development, and career preparation with a futuristic outlook): appropriate and challenging services in any of these areas often cross traditional subject or grade level designations.

16. Talent development in the school setting requires the commitment and support of a broad cross-section of staff, adequate professional time for deliberate and explicit planning, and recognition of need for and importance of gradual implementation over several years.

17. Recognizing and documenting all students' strengths, talents, and sustained interests is a flexible, on-going, and inclusive process, not a "one time event."

(see TREFFINGER, page 23)

Creativity: In the Classroom and Beyond

Karen Meador

Are you a creative thinker? *Tempo* readers will likely respond with a resounding YES, but this may not be the case with some other audiences. A person may say, "No, I've never been good in art," or "No, I just like to listen to music." These indicate the probability that many people have a limited definition of creative thinking. This article expands upon these limited definitions while discussing the importance of creative thinking in people's professional lives and uses this as a premise for encouraging students to think creatively in all core contents. Foundation information regarding creativity in the workplace is derived from a review of literature and interviews conducted by the author. The interview data illuminates the importance of both convergent and divergent thinking in the creative process. Teachers can share this information with students when discussing the value of learning and applying creative thinking. Examples of creative thinking in content are also provided.

> Yet, there is still a need for all teachers to look beyond basic principles of fluency, flexibility, originality, and elaboration toward the application of these components at a qualitatively different level.

Creative Thinking at Work

• Basic Skills

Creative thinking is vital in the workplace regardless of the occupation. The literature on basic skills needed in the workplace makes a strong case for the importance of creative thinking. The American Society for Training and Development (Carnevale, 1990) included creative thinking/problem solving as a basic skill that enables workers to be flexible and to adapt to varying situations in the workplace, and Kerka (1990), who identified job-related skills that employers want, includes creative thinking and problem solving among seven important basic skills. The Oklahoma Department of Vocational and Technical Education (1995) even infused creativity into recommended pharmacology curriculum for practical nurses.

• Research About Creative Thinking

Doctors, engineers, and other professionals also benefit from creativity. A 1983 report by medical schools, colleges, and academic societies (Association of American Medical Colleges) suggested that medical students were not well prepared to apply critical, analytic abilities to problem-solving. It is possible that strides have been made to improve this situation in the last sixteen years, and that medical students are currently better prepared in this area. The ability to think creatively is also important for engineers, who often solve critical problems. Problem-solving is a major component of many engineering programs, such as one at Rice University in which students in 1993 built and improved upon the functions of a basic prosthetic arm. Wong and Swan (1984) discussed training for Papua New Guinea undergraduates in engineering who needed a practical problem-solving emphasis in their college courses. Engineers in New Guinea, as in many other countries, go to remote areas to work where there is no one to give on-the-job training. They must be able to think creatively in order to solve a variety of problems. This statement is applicable to numerous other professions.

• Interviews About Creative Thinking

Several interviews were conducted to gather current information about how people use creative thinking at work, and two definitions of creativity guided the analysis of the interview data. Parnes (1970) defined creative behavior "as that which demonstrates both uniqueness and relevance in its product (p. 6)," and Amabile (1989) stated "a child's behavior is creative if it is novel and appropriate (p. 5)." Both definitions attest to the importance of divergent and convergent thinking within the creative process. Firestein (1993) reiterated this and stated "[f]or many years the misinterpretation has been that creativity is divergent production only . . . Effective creative processes must have the appropriate convergent technology to harness valuable divergence" (pp. 268-269). The interview analysis that follows recognizes the use of convergent and divergent thinking in the creative process.

Those interviewed included an architect, an artist, a computer software developer, a computer business systems consultant, and a manager for a large manufacturing company. All those interviewed entertained similar questions regarding whether they use creative thinking at work, when it is used, and how restraints on creative thinking affect productivity. While the small sample is not sufficient to draw reliable conclusions, the information is interesting and supports the premise that creativity is important in many occupations.

All five people interviewed indicated that creativity is important in their work and discussed specific examples of how they use it. The computer software developer talked about how a typical assignment is to "design a computer program, or part of one, that meets a set of functional specifications, within a certain deadline." The computer consultant said a system that he designs might streamline a given business process, such as how to ring up customers in a restaurant to provide more efficient service and save money for the company. The creation of both products requires careful consideration of the "problem," generation of new program or system possibilities, and selection of an acceptable solution. The architect and the artist also develop products. The architect's job requires creative thinking through problem solving and conformity since creative thinking must be directed at a particular task, and the artist uses it in numerous aspects of his work. The manufacturing manager applies the creative process to create change within

his sector of the business and acknowledged that one of the three major goals for the company is innovation. Yet his use of creative thinking does not end with the development of an innovative idea for change; it continues when he must convince others in the company to accept that change. The computer consultant discussed the same thing when stating that the most creative part of his job comes when he has to figure out a way to get those who are "predisposed against the product" he is trying to add to their system to "embrace the change . . ., accept the product, and create a successful implementation." For example, he used creative thinking in training employees at a large cafeteria chain who were not overly excited about their new computer system. The consultant used "hands-on" contests to make using the new system fun and refined reports coming from the system so that they showed key performance indicators such as how many customers were rung up by the checker in a 15-minute period.

Those interviewed discussed instances when they use convergent thinking as part of the creative process to stay within the boundaries or rules of a given work situation. One of these boundaries involves satisfying customer or business needs, and all those interviewed discussed the need to create results that people appreciate and products they want. For example, the artist expressed both his need to create pieces that will sell and the importance of meeting timelines.

Another boundary for creative thinking involves being true to personal perceptions of the art or craft. Both the artist and the architect indicated that they impose their own rules on creative thinking. The artist discussed creating pieces in groups that had something in common, and the architect talked about the need to pull multiple elements of nature and design into a pleasing whole. These two people differed from those interviewed who work in manufacturing and consulting by appearing to be as concerned with their own product satisfaction and how it represents their field as with the need to please a customer.

Boundaries or rules had mixed effects on those interviewed. For example, some discussed their feeling frustrated or stifled when customers or other employees reject products and suggestions, resulting in modification of their creative ideas. One person felt that the customer's adverse reaction to new modes of operation require a return to archaic operations. Another indicated a similar problem when colleagues in the business were "set in their ways." On the other hand, the artist and the architect discussed how the boundaries of their work that require convergent thinking helped them focus on the task and challenged them. They appeared to gather strength and determination from them as though following their own rules propelled them into using more advanced creative thinking.

Creativity at School

• Examples

The preponderance of evidence regarding the importance of creativity in the workplace naturally leads to concern for facilitating the development of creative thinking among students. They do not have to be musicians, artists, dancers, or actors to need to develop creative thinking. Piirto (1994) asserts that "creative thinking is currently called an ability that is separate from talent in specific domains such as visual arts or writing or music (p. 153)." Some children naturally realize its importance and use creative thinking to survive in school or while completing after-school jobs. A fourth grader, for example, created fictitious situations involving numbers and solved problems in her mind while waiting for the other students to complete math assignments that she quickly finished. A high school student who was bored as he worked at the grocery store, created a system for keeping track of the types of cars driven by people who gave tips and drew conclusions based on the data. Both of these examples demonstrate how students used creative thinking to handle their personal need to keep from being bored. Other students demonstrate creativity in academics by presenting a project display or report in a unique manner. Teachers need to encourage creative thinking that is qualitatively different from these examples. This will be more thoroughly discussed later in this article.

• Processing Styles and Examples

Tardif and Sternberg (1988) summarized information taken from various chapters of Sternberg (1988) and identified processing styles used by creative individuals. These are used to organize the examples of creative thinking in content that follow. These processing styles include "using wide categories and images of wide scope, a preference for nonverbal communication, building new structures rather than using existing structures, questioning norms and assumptions in their domain . . ., being alert to novelty and gaps in knowledge, and using their existing knowledge as a base for new ideas (p. 435)."

Traditionally, teachers recognize at least three of the above mentioned processing styles in a creative thinker: using their existing knowledge as a base for new ideas, building new structures rather than using existing structures, and exhibiting a preference for nonverbal communication. At a minimum, these styles manifest themselves in the development of unique products, presentations, and/or displays of information. The examples in figure 1 (page 24) illustrate ways other creative processing styles may be tapped in the classroom.

Student researchers of any age practice thinking creatively as they investigate topics. They may initiate novel ways of gathering information such as going to a nursing home to talk with elderly citizens about a long-existing problem with the county water system and comparing this information with old newspaper articles located on microfilm in the library. While working with information gathered, a student may discover a gap in his or her knowledge about the topic, such as years unaccounted for in a chronologically organized report, and develop a unique means to garner needed information.

• Suggestions for Teachers

Some educators are sophisticated in their knowledge about creativity and recognize its manifestation by students in multiple forms and contents. Yet, there is still a need for all teachers to look beyond basic principles of fluency, flexibility, originality, and elaboration toward the application of these components at a qualitatively different level. Additionally, it is important to learn about other factors that contribute to creativity, such as personality traits, so that these may be encouraged and facilitated in the school. Following exploration of creativity at a complex level, teachers may want to work with colleagues in their discipline to determine how to facilitate student development of creative thinking in content. While a creativity expert can help educate teachers about creative theory and processes, the teacher is the content expert in the classroom, and he or she must apply this knowledge.

Conclusion

This article makes a case for imbedding creative thinking in the legitimate curriculum of all contents. The information provided regarding creativity in the workplace can be used to educate students about the importance of creative thinking, and the discussion on creativity at school provides examples of the creative process at work in content. Hopefully all of the information provided will encourage readers to examine the complexity of creative thinking, to recognize it in themselves and students, and to value it to the extent that its development is mandated in every classroom and every discipline.

(see MEADOR, page 24)

Creative Ways To Identify Young Gifted Children (K-3)

Joan Franklin Smutny

Imagine for a moment a nursery of seedlings, in which the gardener in charge only waters and feeds the plants at specified times. Those that rise higher than the others may draw the attention of the gardener and receive extra water, but many others that look somehow "irregular" or unusual may never receive that special care. Like rare seedlings, young gifted children need special nourishment and an environment where their unique attributes can develop. Yet what most often happens is that only the students with obvious talent receive the attention they need, while those whose strengths appear inconsistently or in less conventional ways are neglected. It is with these rare seedlings that this article is concerned.

Look for Traits and Behaviors

One of the reasons that many school districts in the U.S. do not offer special services for young gifted children (K-3) is the difficulty in measuring ability in the early grades. For young children, physical, social, and cognitive development is rapid and variable. Cognitive and motor skills come suddenly; one moment the skill is not observable, then it miraculously appears. This is why the attempt to identify gifted children in a controlled setting where the process occurs in a fixed period of time (such as testing or performance in a single class assignment) can only be considered a minimal estimation.

The fairest way to find gifted children in the early years of school is to look for particular kinds of behaviors and characteristics and to look for them over an extended period of time. This way, you will not miss students whose gifts are less obvious (in the academic sense) and those who, for reasons of ethnicity, language, or economic level, do not exhibit talent openly. Recognizing gifted behaviors in a classroom of young, enthusiastic, endlessly active and curious children is not an easy task. So many behaviors are evident all at once that it may become difficult to isolate them or to decide if they are greater than the norm.

I always encourage teachers to begin their talent search by enlisting the aid of parents. Since about 80% of the parent population can identify their children's giftedness by ages five or six, a short cut to finding these students is to consult with them. Although parents are certainly biased in their judgments of their own children, they have had years of authentic first-hand observations that teachers can draw upon. Creating a checklist for parents can be a useful beginning to a lasting, mutually beneficial relationship. In the checklist below, I have included a number of items from a parent checklist in a book I co-authored called *Teaching Young Gifted Children in the Regular Classroom* (Smutny, Walker, & Meckstroth, 1997) and added some additional items to include children from other cultural and language groups. Sending a welcoming letter of introduction and a checklist to parents at the beginning of the year will save a great deal of time and give you some guidance in your talent search. You can also use the list on the following page for your own use in the classroom.

Look for Sensitivities

Besides academic, creative, and physical behaviors, there are also sensitivities of young gifted children to consider. A few items on the checklist allude to their sensory responsiveness. Gifted children absorb their world through every pore. The world bombards their eyes, ears, nose, and taste buds with multiple and complex sensations. The beauty of trees flowering and birds gathering in a flock awes them; blaring sounds from the street assaults them to their bones; the music coming form their mother's radio makes them want to leap around the room, while the percussive sound of feet pounding the pavement or pelting rain on the roof inspires an imaginary game in their minds. They also love the feel of things—bread dough squishing through their fingers, grass rubbing against their cheek, the rough edge of a tree trunk. They love the sweet spice smell of baking gingerbread and the warm smoky smell of a fireplace on a cold evening.

Along with sensory stimuli young gifted children also respond empathically to the people and other living beings around them. They sense the joys, pains, sorrows, and hopes of family members, friends, and classmates and sometimes feel sad when they cannot alleviate the problems of others. Gifted children will often befriend a child whom others tease, perform little acts of kindness for a teacher or parent who seems unhappy, or weep at the cruel treatment of an animal. They will frequently ask questions and express concern about world problems—poverty, war, environmental issues. Sitting in an auditorium, I once chanced to overhear a conversation between two gifted children. It began with one of them describing a wilderness trip he took with his family, but quickly changed. It went like this: "I'm glad to see the land, because when I have kids, it will all be gone." The other child said, "I know. No one bothers now, but when the animals are all killed and trees only live in a museum, then people will know. I'm glad I wasn't born any later. I wouldn't want to be a kid in a place where there are no real woods or wild animals." This is not a conversation one usually hears in a school auditorium, and if I were a teacher, it would certainly rate as a sensibility suggesting giftedness.

Perhaps the most elusive sensibility to document is the intuitive one. It is a special sense, a finely tuned response to the child's environment, an ability to "read" a person or situation beyond the merely outward appearance of things. Many gifted children possess intuition in abundance. It is what makes them aware of truths invisible to other people, sense the feelings of those who keep silent, able to feel their way to a completely new solution or idea and yet unable to explain how they did it. Intuitive responses often happen so quickly that children are unaware of them. They will say, "I don't know how I know this, but I do. I just started trying certain things and somehow I figured out another way to do this."

Teachers collect information on sensitivities like these through direct observations, checklists, and information from parents. Another aid to finding gifted young children in this way is the Fisher Comprehensive Assessment of Giftedness Scale: What to Look for When Identifying Gifted Students (Fisher, 1994). It ranks children's sensibilities, their keen consciousness, enthusiasm, interest, in-depth focus, and serious concern. This essence of giftedness is compared with children's classmates, not national norms. The Scale also assesses areas of precocious development, applied motivation and creative output, aesthetic

PARENT CHECKLIST

My child:

- Is very aware of physical surroundings.
- Has acute awareness of emotional surroundings.
- Reacts intensely to noise, light, taste, smells, or touch.
- Needs less sleep than other children of same age.
- Has long attention span for activities that interest her/him.
- Becomes so involved that he/she is not aware of anything else— "lost in own world."
- Has an excellent memory.
- Insists that people be "fair." Complains when things are "unfair."
- Is extremely curious—asks "Why?" "How?" "What if?"
- Asks questions about abstract ideas like love, feelings, relationships, or justice.
- Explains ideas in complex, unusual ways.
- Is very interested in cause-effect relationships.
- Reasons well. Thinks of creative ways to solve problems.
- Has a vivid imagination and an ability to improvise games or toys from commonplace materials.
- Is extremely creative—makes up elaborate stories and excuses; sees many possible answers/solutions; spends free time drawing, painting, writing, building, experimenting, or inventing.
- Has a spontaneous and whimsical sense of humor.
- Likes to play with words. Can absorb the speech patterns and vocabulary of different people and imitate them in stories, rhymes, or games.
- Is often singing, moving rhythmically, or using mime in self-expression.
- Is responsive to music and can improvise with tunes, rhythms, sounds.
- Is a leader in organizing games and resolving disputes.
- Moves around a lot. Is very active—sometimes seems hyperactive.
- Can concentrate on two or three activities at one time.
- Craves stimulation and activity. Is rarely content to sit idle.
- Is eager to try new things.

perceptions, and much more. This broad view deepens the scope for finding gifted children beyond test scores.

How to Document Talent in Young Children

One of the clearest ways to document talent in young and especially minority and economically disadvantaged students is to collect a wide range of their work, as well as observations and anecdotes describing behavior from parents and community members. This information could take the form of an ongoing portfolio and record of achievement. The process of gathering evidence should reach beyond the confines of a classroom and integrate what the child is capable of at home and elsewhere. Portfolios provide authentic assessment, evidence which is valuable in determining instructional plans, especially for children in kindergarten to third grade.

Advantages of portfolio assessment are that it does the following:

- validates your observations and hunches about a child;
- enables you to speak more informatively with parents and support staff about your plans;
- builds a concrete bridge between you and parents so you can both see what the other is talking about;
- helps you evaluate the child's progress;
- guides you to a more child-centered response curriculum;
- broadens your ideas and choices to offer your children;
- justifies what to look for in identifying other students and becomes a learning tool for you;
- creates a source of pride and accomplishment for the child.

A portfolio is a strength model, not a deficit model. It is a collection of products and observations about children at home, school, and in their community. Because expressions of giftedness vary in children and cultures, you will be looking for evidence of talent in a variety of domains—creative, intellectual, kinetic, emotional, intuitive. You can use audio and video tapes, projects the children have worked on, or notes casually written in the spur of the moment as part of the portfolio.

(see SMUTNY, page 25)

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Needs Assessment for GT Programs

Linda N. Lucksinger

Conducting a needs assessment can be a long and arduous task; therefore, many of us put it off or try to ignore the fact that it is a necessary part of establishing and maintaining educational programs. Why conduct a needs assessment? The answer to that is that we need to collect as much data as possible for decision-making related to establishing new programs, reviewing and evaluating existing programs, and for future needs.

Why are we making decisions and who are they going to benefit? Usually we are trying to determine what student groups we need to serve and how we are going to serve them appropriately. In gifted programs identification of gifted learners is intertwined with programming decisions. Determining who is "in" the program may be influenced by the program that is offered (Boyd, 1992; Davis & Rimm, 1989). On the other hand the program offered may depend on the needs of the identified gifted learners (Clark, 1988; Alexander & Muia, 1982). In either case data collection can be valuable in providing background information for both identification purposes and program decisions.

Some of the questions district gifted committees and administrators struggle with are: "After a definition of giftedness has been established, then what? Do we identify the students and build a program around their specific needs? Or, do we decide on the type of programming our district can/wants to offer, then identify students whose needs match the program?" (Boyd, 1992, p.64). In order to answer these difficult questions, the local gifted advisory committee should organize and mobilize for a thorough collection of data commonly known as a needs assessment. It will be the responsibility of this committee to analyze the data collected and to formulate the report. The g/t advisory committee should be representative of all stakeholders, thereby providing individuals with expertise in the various areas for the data collection process.

Benefits of a Needs Assessment

A needs assessment helps the g/t committee discover any possible mismatches in what is needed for gifted learners in the district and what realistically can be provided. It provides a clear picture of what can and cannot be developed.

PLANNING

Summer

- **Training** of GT committee members for conducting the needs assessment
- **Planning** – establish specific timeframes for meeting, the collection of data, and analysis

Fall

- Early fall, **communicate** with all stakeholders.
- During fall, **distribute** surveys, **conduct** interviews, **collect** all data and **analyze** as data comes in.

Spring

- Early spring **summarize** data into a report and make recommendations before budget and personnel decisions are made for the coming school year.
- **share** report with all interested parties.

Figure 1: Timeline (abbreviated version)

Data Collection

Before engaging in data collection the gifted advisory committee should consult with the appropriate school administrators and keep them informed of plans and methods. The cooperation of everyone is needed to successfully complete the task. A major priority at the beginning of the endeavor should be determining the best way to communicate with those who have the information you need. Many problems and aggravations may be avoided by proper planning and effective communication before the initial data collection begins. (See Figure 1.) Remember you are collecting data at this point, not making judgments. As in brainstorming, get it all down, accept everything for input. Critical analysis comes after you have the facts in each area.

A needs assessment collects information in the following areas:

• **General Student Body** – examine the AEIS data report (TAAS Reports). This provides demographic information on gender, ethnicity, test scores, dropouts, at-risk students, current GT students, and it may even be able to provide population trend data.

• **Current Gifted Population** - get the specifics. What are the numbers for each category: gender, ethnicity, SES, academic, at-risk within the GT population, LD within the GT population, and potential GT students? Were some students repeatedly nominated over the years, but for some reason not accepted for GT services? Why? Look at this list over time. Look for patterns that may indicate positive and negative information concerning the identification process used for each individual GT program in the district. Identify the instruments and methods that are used for GT identification in your district. Examine them for their usefulness and for any bias.

• **School District Personnel** - Who plays key roles in various aspects of identifying and providing services to gifted learners in your district? Identify them specifically, and make a list. Then look for their areas of expertise which can be utilized for the benefit of the GT learners. (See Figure 2.) Find out the attitudes of teaching personnel toward gifted education. Try to discover who is supportive and who is not supportive of the GT program.

• **Campus/District Characteristics** - the organizational structure. Use

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Teacher and Staff Demographic Data

Name:_____ _____ _____
Campus: _____Assignment:_____

Gender: M F Ethnicity: W H AA H A/PI NA Other

Degrees Earned:_____Date:_____

CertificationAreas: _____

Professional Development during past 2 years: _____

Areas of special interest, knowledge, or hobbies:_____

Are you interested in becoming a teacher of the gifted and talented?
Yes No

Are you interested in teaching AP or Pre-AP classes?
Yes No

I am not interested in teaching either of the above, however, I am interested in being involved as a resource person or a mentor.
Yes No

Do you know of anyone that would be good at working with gifted and talented students?
Yes No

Figure 2: Teacher Staff Survey (abbreviated version)

organizational charts. Is this truly how it works, or is it on paper only? What is the true structure? How are students and classes organized on each campus? There are many models available to GT programs. You will need to survey each campus about organization and scheduling for GT students. The campus administrators and GT teachers will be valuable resources.

• **The Physical Settings in Which Individual GT Programs Operate** - types of facilities, what is available, size, location, allotted time available for GT, condition of facilities, etc. Do these items match the program that will be housed? What are the limits associated with each campus setting? Site visits and discussions with local school administrator are required for this data collection. Ask about future plans related to buildings and facilities and their use.

• **Economic Factors of the District and Local Community** - budget, resources, and revenues. In this section your needs assessment must contain accurate information related to the current budget and future budgets predictions. Look at current costs and expenditures and at future projections. The economic health of the community and of the district will impact the GT budget. School board documents, central office budget officers, and campus administrators can help you collect the financial information relevant to the GT program.

• **State and National GT Policies** – Texas Education Agency's office of Gifted and Talented Education and the U.S. Department of Education can supply documentation on GT policies. Contact the Texas Education Agency for Texas Education Code 29.121-29.123 and 42.156 adopted in 1995 and the Texas Administrative Code, Subchapter A 89.1-98.5 adopted in May 1996 for specific statutes and policies. The *Texas State Plan for the Education of Gifted/Talented Students* (1996) is available. You may visit the TEA web site for Gifted and Talented Education information at http://www.tea.state.tx.us/gted. Many Texas school districts are undergoing District Effectiveness and Compliance (DEC) visits. This document is available at the TEA web site titled "District Effectiveness and Compliance Reference Guide for Gifted/Talented Education". This seventeen page document provides insights into the DEC process and is very helpful in preparing for the DEC visit as it relates to GT programs.

• **The Community** - the greater environment in which the school operates. Collecting information related to the community that is served by the school can often provide support for school programs and can provide answers to problems that need solving. Look at the broad demographic data and trends of the community. Do they match the school population? What community support services are readily available for GT students in need? How can educators best interact with the business community for positive results for GT programs and GT learners? Your local Chamber of Commerce can supply some of this information. Your school may already have collaborative networks and contacts with various community groups and social service agencies. Ask administrators and resource personnel for assistance in collecting this information.

• **GT Programs Options That Can be Realistically Sustained in the District.** ". . . The greatest gains in teacher learning were in places where whole schools studied their student results and agreed on what they needed to learn collectively and to do differently to improve those results" (Renyi, 1998, p. 71).

As data from each area of the needs assessment process is collected, the GT committee should begin a critical analysis. This provides an awareness of what can realistically be sustained in your district in the area of gifted and talented education. An on-going review and up-date of the data will allow your program to flex with changes that occur and allows you to provide appropriate services needed by the gifted and talented students in your district.

Summary

The difficult part is getting started and convincing others of the importance of the needs assessment. Once established the maintenance of the data should become a common habit in your district. The needs assessment provides the answers to the dilemma of who to serve and how to serve them. ". . . The process of conducting a needs assessment generates a vast amount of information that allows gifted program planners to make appropriate decisions. . . .The needs assessment is the logical place to begin formulating a program that assures efficient and effective use of the planners' time and the gifted students' time, as well" (Boyd, p. 66).

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(see LUCKSINGER, page 30)

Looking for Needles in a Haystack: *Disadvantaged Gifted*

Mary Caubel, Janet Whitley, and C. Renee Goodwin

Finding disadvantaged gifted kids is evidently difficult. Data shows that in Texas, and in the entire country, members of minority populations are underrepresented (Frasier, et. al., 1995). The implication is that students who have limited proficiency in the English language, are economically disadvantaged, or represent certain minority groups, are not gifted. This is definitely problematic in view of the fact that giftedness is evident in every population group. Why is there no connection between what is stated and actuality? This discrepancy exists and must be addressed, particularly in Texas, where demographic changes are occurring rapidly. While swelling numbers of low socioeconomic and often disenfranchised students are stepping through the schoolroom doors needing all kinds of services, gifted education is rarely considered as a part of the solution. Addressing the issue of underrepresentation is important, and sweeping changes could be made using methods and strategies that are already available. Educational practices should be altered in order to improve options for disadvantaged students. Reversing the trend is imperative.

> Educators must change their thinking concerning economically, ethnically, and culturally diverse students.

Frasier, Garcia, and Passow (1995) state that there are three major reasons for underrepresentation: test bias, selective referral, and reliance on deficit-based paradigms. It is easy to understand why test bias might cause a problem. The dominant group used in norming tests is awhite, middle-class, native English-speaking populations. Robert Sternberg (1985) states that conventional concepts of intelligence are incomplete and that, while ability testing and achievement testing are connected, they are disconnected from the outside world. What does this mean and why the concern? The system just described is set up to perpetuate itself. Traditionally, the view of school-related intelligence has been based solely on linguistic and logical-mathematical aptitude as measured by standard IQ tests. A high score is then "validated" because a high IQ student generally does well on standardized achievement tests; a cycle has been established. In reality, these types of tests only show the capacity for scoring well on other similar tests, rather than whether the test-takers will be successful in life. Success on these tests is what society has accepted as "intelligent," ignoring that many high scorers, in fact, can not create or apply what they know to the real world. The norming of these tests, using white, middle class, native English-speaking students, creates a system where students who do not fall into this category are set up to fail. This, in conjunction with the fact that the system focuses on a linguistic and logical-mathematical base, ignores students who might do well, if given the opportunity, in practical and creative intelligence areas delineated by Sternberg (1985) in his Successful Intelligence theory.

The emergence of selective referrals, the second type of underrepresentation identified, occurs when traditional tests are overvalued. Educators selectively refer only those students who score high on the selected tests. Referring by scores alone often leaves out the low SES or disadvantaged children of many minority groups. These students do not fit the system and many do not do well on standardized measures because these measures were not designed for them. If educators in the selection business would take Ruby Payne's economic class inventories (1995), they would have an opportunity to understand how little they know outside their economic "caste" system. It is a real stretch for a middle class person or teacher to relate to life and issues outside their economic level. If the standardized tests had been normed on individuals from poverty with questions related to their lives, middle class students might not do as well. Standardized tests discriminate against students whose linguistic and perceptual orientation, cognitive styles, learning and response styles, economic status and cultural or social backgrounds differ from the dominant norm group (Frasier, 1995). Test bias and selective referrals have long been concerns, and in spite of efforts to eliminate both, they remain problems. These so called standardized tests in fact protect and buffer those in the selection business by making it easy to say, "they didn't meet our criteria."

Research indicates teachers and school professionals do not expect much from culturally and linguistically diverse students (Frasier, Garcia, Passow, 1995), thus leading to underrepresentation. These students are considered to be equally and negatively affected by their environments and language differences and are thus overlooked (Frasier, 1995). Payne (1995) describes several characteristics highlighting the fact that school professionals do not recognize the gifted behaviors exhibited in these students. Their use of the casual language register rather than the traditional language register used in the school setting along with the often evident lack of order and organization are two primary characteristics that mask gifted behaviors. In addition, some disadvantaged/poverty students may not think in terms of the future, thus typically relating only to things in the present. A tendency to be polarized in their thinking also makes it difficult to think abstractly. Another issue that might obscure seeing giftedness in disadvantaged students is the importance they may place on relationships over other aspects of living and working. This could manifest itself in classroom behaviors that focus not on completing assignments but on making connections with other students and people inside and outside the classroom. Having a sense of humor is often important to students of poverty. However, if that humor is displayed inappropriately, educators may not recognize it as a gift. Teachers who do not understand these issues related to poverty could conclude that disadvantaged students are not capable of giftedness, thus supporting current thinking — that if they don't score well on tests, then they must be behind and can not

be expected to accomplish much. When this happens, underrepresented groups are viewed as homogeneous, expectations are lowered, and they are not considered for advanced level programming.

A third reason for underrepresentation is an over-reliance on the medical model of serving students. The focus of this model is to identify deficits, highlighting the student's weakness and beginning remediation. Limited, if any, attention would be given to the student's strengths. With the above-mentioned characteristics Payne (1995) identifies in children of poverty, it is apparent that the student would not be exhibiting the traditional characteristics of a gifted child; therefore, chances are high that no potential would be recognized and no thought of gifted programming would be considered.

What conclusions could be drawn from these three major reasons for underrepresentation? Clearly, a majority of professional educators do not attempt to detect giftedness using a system other than the traditional means and methods. Efforts to look at multiple methods of determining gifted potential that are fair to all students must be designed. However, there are previously established methods and strategies that individual classroom teachers and individual campuses can use to reach out to disadvantaged students and help uncover their giftedness. The central core of assumptions that educators have about disadvantaged students and their gifted potential must be overcome. While educators must analyze their beliefs and misconceptions about disadvantaged children, about their ability to learn in school and eventually succeed in society, it is paramount, due to the increasing number of disadvantaged children, for the problem to be addressed.

Texas A & M researchers (Murdock, et. al., 1997) indicate that the percentage of family households in poverty will increase to 17.3 percent by the year 2030, with the greatest increases affecting single-parent families: 29.7 percent for families headed by males and 49.1 percent for households headed by females. In addition, school enrollment is expected to increase by 60.7 percent, with the number of Anglos decreasing, while the sizes of other ethnic groups increase drastically. Educators must change their thinking concerning economically, ethnically, and culturally diverse students. But how can educators change old belief systems and move to an era where strengths of disadvantaged students are nurtured and supported and giftedness recognized?

While we could wait for a coercive change process with a state mandate demanding that each campus identify a proportional percentage of economically, ethnically and culturally challenged students for gifted programs, a more proactive approach would be for each class, campus, and district to begin a self analysis, asking why the classrooms for gifted students are not proportionally reflective of their student body population. Immediate instructional practices should be put in place to promote the emergence of the giftedness of students.

Two instructional practices that will benefit disadvantaged students, as well as all students, to promote the emergence of their giftedness are the use of learning styles (Dunn, Dunn, and Perrin, 1994) and Howard Gardner's Multiple Intelligences (Gardner, 1983). A foundation for identifying strengths, they offer educators a variety of ways to understand and teach individual students in the style in which they learn best. How can teachers use these two concepts to examine and modify what they do instructionally to meet the unique needs of the disadvantaged gifted student?

The framework of learning styles allows educators to identify strengths of disadvantaged students leading to opportunities to develop rich learning environments. Dunn and Dunn (1994, p. 2) define learning style as "the way each learner begins to concentrate on, process, and retain new or difficult information." They describe some basic elements, which they believe form the basis for examining the learning style preferences of students. Those elements, which describe many gifted students, are that they are highly motivated and have strong preferences for kinesthetic and/or tactual perceptual strengths, although they also tend to be high in auditory and visual perceptual abilities as well. They prefer to learn alone rather than in groups, and they prefer late morning and afternoon learning times. Another way to examine learning preferences is through processing styles — is a student analytical or global in approaching learning tasks? Analytic learners prefer to learn information sequentially and cumulatively. They want the pieces to build into a "whole." Globals, on the other hand, prefer to see the big picture first, and then learn the details. Analytic learners tend to be persistent and want to finish a task once they start on it, while globals are less persistent — they like to work on several tasks simultaneously or take breaks while working. The Dunns have found that most young children are global and that some children become analytic when they are adolescents and older.

Howard Gardner, in his 1983 book *Frames of Mind*, first described multiple intelligences. He suggests that intelligence is characterized by problem solving ability and that individuals learn in identifiably, distinctive ways (Gardner, 1991). Gardner originally grouped capabilities into seven categories of intelligences: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, and intrapersonal (Armstrong, 1994). An eighth intelligence, naturalistic, was added by Gardner in 1995. Basic to understanding and working with Gardner's philosophy of intelligences is the belief that each person possesses all eight intelligences and that each intelligence can be developed to an adequate level of competency by most people. The strength in Gardner's model for working with disadvantaged children is that it allows teachers to view students from multiple perspectives and see all children as "smart" in their own way.

It is apparent that problems continue to exist in identifying and working with disadvantaged gifted students. These students are often not being identified because their giftedness is hidden by ineffective identification methods. Underrepresentation is rampant. Administrators and educators must be willing to make adjustments to allow the emergence of talents of disadvantaged gifted students. Educators must accept that these students do exist and find them using concepts such as learning styles and multiple intelligences. The trend must be reversed and guided toward equal opportunities for all.

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(see CAUBLE, WHITLEY, & GOODWIN, page 25)

Bilingual and Monolingual Students Benefit from Unique Partnership at Magnet Schools

Marta Mountjoy, Diane Permenter, Luisa E. Arce Rogalla, Jan Roland, and Will Ramos

In the fall of 1987, three elementary magnet schools, called Academies for Excellence, were developed to provide appropriate instruction designed to meet the needs of three unique students groups: 1) one-third of the student body comprised of regular-education neighborhood children; 2) one-third identified as academically gifted; 3) one-third identified as artistically and/or musically talented students. Students are ability grouped for math and reading instruction and study in mixed ability groups for all other subjects, school-wide enrichment, and extended- day classes. The artistically and musically talented students participate in enriched art and music classes, in addition to academic and full-time art and music programs.

The baseline thinking skills curriculum for all students in grades kindergarten through grade five is the Talents Unlimited Model. Verbally and mathematically gifted students receive advanced instruction through differentiated curricula and technology integration. The Bilingual Gifted Program begins in grade two and continues through grade four. Students become more integrated at grade five, as they participate in a gifted ESL class. While these students are served with curriculum that parallels the monolingual gifted program, they have the added dimension of learning English as a second language. These students not only benefit from the magnet school format through homogenous and mainstream classes, but they offer their monolingual peers the gift of cultural diversity and the opportunity to learn Spanish, as well. With this philosophy in mind, the Bilingual Gifted Program has adopted as its theme, "It's a Gift to be Bilingual." All of these academy students enjoy many speakers, field trips, integrated units of study, art and music performances, in addition to counseling and study skills opportunities.

Historical Perspective and Initial Development of Bilingual Gifted Program

Nationwide statistics document that Limited English Proficient Hispanics are critically underrepresented in Gifted and Talented programs. With this information as a benchmark for program design, the Garland Independent School District, a suburb east of Dallas serving 47,693 students in kindergarten through 12th grade, has initiated a proactive innovative response to this underserved population group.

From its inception in 1981, various program formats provided limited services to academically gifted Hispanics students until the 1994-95 school year. At this time, Garland's Gifted and Talented Program identified intellectually, academically, artistically and musically talented students using typical assessment procedures and measures such as the *Kaufman Brief Intelligence Test (K-BIT), The Iowa Tests of Basic Skills (ITBS) reading and math scores, the Visual-Motor Integration Test (VMI)* and several informal talent assessments. Identified students in elementary, middle, and high school received instruction in magnet schools. Participants were placed in homogenous and heterogeneous classroom arrangements. Analysis of the ethnic configuration of these programs found the following representations: 2% Hispanic, 5% African American, 6% Asian, no Native American, and 87% "other". At that time the gifted program population did not reflect accurately the district's overall ethnicity, with marked underrepresentation of minority students.

Although the elementary Bilingual/ESL teachers had occasionally nominated potentially gifted Hispanic students, these students were seldom placed in the program. When these students were assessed using traditional achievement, ability and fine motor instruments, they seldom obtained scores as high as the identified gifted students. This pattern of referral and nonacceptance was frustrating to teachers, parents, and students. In search of an equitable solution to this problem, Garland educators turned to Edgewood ISD, a suburb of San Antonio, for ways to restructure their identification process and program model.

Currently these students represent the following ethnic populations in GISD: 24% Hispanic, 16% African American, 6% Asian, 7% Native American and 52% other. As a result of implementing a variety of new assessment procedures, Garland ISD now serves 9% of its Bilingual Hispanic student population in its Gifted Program, as compared to the 3% national average.

Bilingual Gifted Program Design: A Unique Partnership

During the 1993-94 planning stages of this new component, the following Bilingual Gifted Program goals were developed:

- Provide a quality accelerated and academic enriched program for economically and culturally diverse gifted Hispanic bilingual students.
- Increase family support for the gifted Hispanic bilingual student through parent participation in all areas.
- Implement on-going staff development in the areas of gifted and multicultural education and second language acquisition methodologies.
- Accelerate the development of the student's bilingualism to far surpass the challenge of high school Spanish courses and Advanced Placement Spanish college courses.
- Develop the competitive academic and language competencies needed for gifted Hispanic students to succeed in the mainstream Gifted and Talented Program, to qualify as National Merit Scholars, and ultimately to meet the challenge of a pluralistic society.

Authentic Assessments = Accurate Identification

Convinced that identification procedures and program design needed to be modified, Garland educators agreed to 1) focus more of the assessment on potential, creativity, and problem solving; 2) administer all tests in Spanish; 3) provide identified bilingual gifted students with a bilingual class as an integral component of the magnet school program; and 4) provide an annual summer enrichment program.

In order to ensure an optimum learning environment for each student, a student profile is developed for each program candidate. This student profile is comprised of various formal as well as informal assessments, including the *Screening Assessment for Gifted Elementary Students-Primary (SAGES-P)*, the *Matrix Analogies Test-Short Form (MAT-S)*, the *Spanish Assessment of Basic Education (SABE)*, which is the Spanish version of the ITBS, the *Test of Divergent Thinking*, and the *Williams Scale* by Dr. Frank E. Williams. The Bilingual /ESL

Coordinators give updated training to the Bilingual/ESL gifted teachers on how to properly administer the various tests prior to the designated assessment day. Following the official assessment day, teacher and parent nomination forms are added to the student profile, thus giving a comprehensive picture of the student's overall performance.

Collaborative Partnership Between Two Special Programs

Since its inception in 1994, the Bilingual Gifted Program Model in grades two through five has been organized on the district level by the Bilingual and Gifted Program central office administrators. A district-level Bilingual Gifted Program Steering Committee meets on an ongoing basis to continually refine the program goals and objectives.

The Gifted Program Coordinator and the Bilingual/ESL Coordinator plan monthly to implement program activities. In addition, the Bilingual/ESL and Gifted departments designate required time and monies essential to all other aspects of the model such as:

- Assessment Procedures
- Parent and Community Involvement
- Program Evaluation
- Staff Development
- Summer Enrichment Program

Bilingual Gifted Program Expansion Plans

Based on annual parent evaluations, teacher requests, and the district's emphasis on early intervention for all high achieving bilingual students, the Bilingual/ESL and Gifted Program Coordinators have proposed the following plans in for the 1999-2000 school year:

- Talent Development for all kindergarten and grade one Bilingual students
- Leadership Development for middle school ESL students
- Gifted and Talented staff development for all Bilingual and ESL teachers
- Mentorship model with Bilingual Gifted Program teachers for regular Bilingual Program classroom teachers
- Summer enrichment program for primary "Talent Pool" Bilingual and ESL students

School District Support And Staff Development

Not only does Garland ISD promote and support the Bilingual Gifted component of the Gifted and Talented Program financially, but it continually seeks to provide substantial student, parent, and teacher benefits as well. Bilingual/ESL students may use the complimentary bus transportation services for attending school, afternoon tutorials, and / or enrichment. PTA and informational meetings with parents always include child-care and refreshments. All magnet school teachers are provided (without cost) thirty hours of gifted education from the partnership between the Bilingual and Gifted Program departments. In addition, the Bilingual Gifted Program teachers attend local and state conferences for advanced staff development and serve as mentors to their grade level monolingual peers.

Parent/ Community Involvement

Parents are invited to engage in extensive involvement in their children's education. The state requires parental participation in decision making in relation to the educational plan of the Limited English Proficient student. Parents of Bilingual Gifted students are encouraged to participate at academy information meetings which are held regularly for the bilingual community. Topics include general and specific information about both the Bilingual and Bilingual Gifted programs. Hispanic parents may access the same service in order to eat lunch with their child at school, visit and volunteer in classrooms, or attend teacher/parent conferences.

Within each academy, volunteers help with these and other activities:

- Field trips
- Camp Grady Spruce
- Overnight field trips
- Clinic/Office
- Classrooms

As a result, the Hispanic parents feel welcome and integrated within the total school environment. As one parent reported, "This is the first time I have felt like a real person in a school."

Summer Enrichment

All identified Bilingual Gifted students, as well as those who are newly nominated, are invited to attend Garland's annual three-week Summer Enrichment Program. Parents are asked to pay a nominal Camp GISD registration fee, which includes classroom materials, a t-shirt, and hat. The Bilingual program provides the facility, transportation, basic classroom supplies, and classroom assistants. The curriculum is designed by the selected Bilingual Gifted Program teachers with a focus on introducing creativity, critical thinking, and problem solving skills to newly identified Bilingual Gifted students. Additionally, Bilingual Gifted students who have been in the program may attend half-day advanced content classes during the same three weeks.

Student Growth = Student Success

The original class of twenty-three Bilingual Gifted students are currently sixth and seventh graders at Austin Academy of Excellence, Garland's middle school magnet. Before these students began Austin Academy, they were exited from the district's Bilingual/ESL program. As a result, they are presently participating in Enriched Honors (gifted classes), choir, band, art and after-school activities. As might be expected, these students encountered normal growing pains as they experienced the transition from elementary to middle school, but the positive results were worth the struggle. While all twenty-three students are not performing at the 90th percentile on all areas of the *Iowa Test of Basic Skills*, eleven of these students scored at or above grade level in Math and/or Reading. All twenty-three students mastered all objectives in English on the spring 1998 TAAS test. Austin Academy teachers closely monitor their classroom performance and provide academic mentors for peer support.

Conclusions/Observations

Based on the increased number of identified and served Bilingual/Gifted students, this district has made commendable progress. Still it is not content with status-quo. As active advocates for Bilingual/Gifted children, Garland educators are continuously looking for ways to grow and develop this program to its full potential. With regret they look to the past; with pride they look to the accomplishments of the present; and with renewed hope and energy they look to the promise of the future.

(see MOUNTJOY, page 25)

(from STERNBERG, page 1)

children with very good hearing, and he would be fairly doing his job.

The Closed System of American Education

I believe that schools in other parts of the world, including the U.S., echo the Jamaica situation, without being aware of it. In most schools, two kinds of abilities are at a premium: memory abilities (those abilities used to memorize, recall, and recognize information) and, to a lesser extent, abstract analytical abilities (those abilities used to analyze, judge, evaluate, compare, and contrast fairly abstract concepts). When we identify gifted children, we identify them as excellent primarily with respect to these abilities. The ability tests we use measure these skills, learning from instruction requires them, and then achievement tests assess the degree to which the abilities have been applied successfully. People who do well on the ability tests tend to do well in school, and vice versa, because both settings require similar abilities.

The problem is that these abilities are not necessarily the ones that matter most in the life activities for which school is supposed to prepare our children. How many times have you had to memorize a book or a lecture in your job as a school administrator or even as a teacher? Unless you teach math, how many times have you had to remember the theorems you learned in plane geometry? How many times have you seen the extremely obscure words that often occur on vocabulary tests? Probably almost never. You could be a gifted teacher but only a fair memorizer. But there are other things you have to do, to be gifted as a teacher or in almost any other demanding job.

Jobs require memory and abstract analytical skills in some degree, but they also require other and arguably more important skills as well. It is no surprise, therefore, that even supporters of current tests who are as traditional as Richard Herrnstein and Charles Murray in *The Bell Curve* admit that conventional tests of abilities and even of achievement predict only about 10 percent of the variation among people in real-world measures of success. In other words, these tests are only poor predictors. What happened to the other 90 percent? I address this problem in a book I have written.

Successful Intelligence

In my book, *Successful Intelligence* (Plume, 1997), I argue that intelligence in everyday life requires a broader range of abilities than is measured by conventional tests. The problem with these conventional tests is that they spotlight as gifted those children who have substantial doses of certain abilities (especially memory and abstract-analytical ones), but leave in the dark children with other kinds of abilities, such as creative and practical ones. Children with other kinds of abilities may be derailed from the fast track early in life, with the result that they never get the opportunity to show what they really can do. Not only do we disenfranchise these children, but we provide almost limitless opportunities for those individuals who do not necessarily have the broader range of abilities they will need to take advantage of the opportunities they receive. The best performers on the job are not necessarily going to be those who got straight A's in their schooling. Such grades might not hurt. But the practical skills required to do a job well and to maintain a life outside the work place are probably going to be a lot more important than the memory and abstract analytical skills that led to A's in courses. Similarly, the creative skills required to respond to a rapidly changing environment are also ones not likely to have been rewarded in most classrooms.

The problem with our present curricula is that practically all responsible jobs require creative skills, but students are not adequately encouraged to develop these skills. Scientists may need abstract-thinking skills, but without the creative skills to generate new ideas and the practical skills to gain acceptance of their often unconventional ideas, they are lost. Artists need creative skills to do their work, and practical skills to get it displayed and accepted. Teachers need the creative skills to bring a fresh approach to their teaching, and the practical skills to make meaningful contact with students, parents, and administrators alike. Ironically, the skills we value most of all in the conventional school curriculum seem to be those that often matter least in life.

Teaching and Assessing for Successful Intelligence

In order to help remedy this situation, I have worked with colleagues at Yale to try to restructure the processes of ability testing, instruction, and assessment of achievement. In collaboration with Michel Ferrari, Pamela Clinkenbeard, and Elena Grigorenko, I started by developing a group-administered research version of what I refer to as the Sternberg Triarchic Abilities Test (STAT). There are two levels currently available at cost for research purposes—one for children at the high school level (roughly ages 15-18) and one for children at the intermediate, fourth-grade level (roughly ages 9-10). The test measures the conventional kinds of abilities, but other abilities as well.

One-third of the test measures the kinds of memory and analytical abilities evaluated by conventional tests of intelligence and scholastic abilities. Another third of the test measures abilities more germane to creative thinking and coping with novelty—the ability to think in novel ways. And the last third of the test measures practical abilities of the kinds needed to adapt to everyday life.

The three kinds of abilities—(1) memory-analytical, (2) creative, and (3) practical—are each measured in four different ways: via (1) verbal, (2) quantitative, and (3) figural multiple-choice items; and via (4) essays. The multiple-choice items are objectively scored, the essay items subjectively scored via trained raters (who are taught to focus on the abilities being measured and to ignore irrelevant attributes, such as spelling or punctuation). The goal is to obtain a more nearly complete picture of a child's abilities than would be possible from a conventional test.

The memory-analytical section looks pretty much like a conventional test, requiring students to figure out meanings of words in context (verbal), complete number series (quantitative), and complete figural matrices with a missing term (figural). The high-school level analytical essay requires students to analyze the advantages and disadvantages of armed security guards in schools. The creative section is less conventional, requiring students to solve verbal reasoning problems with counterfactual premises (e.g., what would the solution to this analogy be if money fell from trees?), solve quantitative problems with new mathematical operators (e.g., flix: A flix B = A + B, if A is greater than B; and A - B, if A is less than or equal to B), and complete figural series with unusual mappings. The high-school creative essay asks the student the design of an ideal school. The practical section requires students to solve verbally presented everyday problems faced by typical high school (or elementary-school) students, solve practical quantitative problems involving recipes, train schedules, or purchase of athletic-event tickets, and plan routes using (figural) maps. The high-school practical essay requires students to describe a problem they have and three practical solutions to it.

Teaching and Assessing for Successful Intelligence

When we selected high school students for a summer program on the basis of this test, some interesting things happened. Students all around the country took the test. We selected five groups: analytically gifted, creatively gifted, practically gifted, gifted in all three abilities, and not gifted in any of the three abilities. Our first finding was unexpected.

The analytically gifted group looked pretty much like a standard gifted group: mostly white, middle-class, and attending strong schools. But the creatively and practically gifted groups were much more diverse in terms of ethnic, socioeconomic, and educational background. In other words, we found that we had selected more minority students not through any program of "affirmative action," but through a program of recognizing and valuing abilities that schools typically neglect, both in their instruction and in their assessments.

We also found the test to be reliable and predictively valid. In a study of a summer program for the gifted held at Yale, we found that the analytical, creative, and practical sections all predicted achievement in a high-school psychology course. This course had been taught in different ways to value analytical, creative, or practical abilities. So, for example, an analytical task might involve analyzing the strengths and weaknesses of a scientific theory or experiment; a creative task might involve generating a new theory or experiment; and a practical task might involve applying a theory or experiment to one's own life.

In our study, the best predictor was analytical abilities and the poorest, practical. In a replication performed by Deborah Coates at the City University of New York with poor, African-American children, the pattern of prediction was reversed, with practical thinking giving the best prediction and analytical thinking the poorest.

We also found that students who were placed in an instructional program that matched their pattern of abilities outperformed those who were mismatched. In other words, if students are taught in a way that at least partially values their strengths, they perform better than if they are taught in standard ways that always value the same abilities, namely, the memory and abstract-analytical ones.

Perhaps you are thinking that it just is not feasible to match instruction to students' patterns of abilities. We anticipated this objection. So together with Bruce Torff and Elena Grigorenko, I designed a study that taught either third-grade social studies or eighth-grade science in one of three ways: in the traditional way, with an analytical (critical-thinking) emphasis, or with a three-prong emphasis on creative and practical as well as on analytical abilities. As it happened, the third-graders were not preselected in any particular way, whereas the eighth-graders were selected as gifted by the SAT. The achievement of all students was assessed via analytical, creative, and practical performance assessments, but also via standard multiple-choice assessments that emphasized the kinds of memory-learning that are emphasized in most standardized achievement tests and statewide mastery tests. Regardless of whether students were previously identified as gifted or not, the three-prong instruction not only resulted in better performance on the performance assessments, but even on the multiple-choice memory-based assessments. In other words, by letting students learn the material in three different ways, and thereby make the most of their patterns of abilities, students learned better, even when achievement was measured in conventional ways.

To effect change in education, we need not only change the ability tests, but the instruction and the tests of achievement as well. When we emphasize all three kinds of abilities—analytical, creative, and practical—rather than just one, we will find that many of the students who now seem rather inept actually have abilities that, under traditional systems of testing and instruction, remain hidden and ultimately go to waste.

We can make the change with relatively little effort because teachers already know how to teach analytically, creatively, and practically. Often, they are afraid to do so lest their students not do well on mastery or other conventional tests. Our results show that the students will actually perform better on all tests when given a chance to learn in a way that best allows them to bring their strengths to bear on their classroom learning.

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(from RENZULLI, page 7)

tator began by helping the students obtain some books on ornithology, marketing, and advertising as well as how-to books on birdhouse and feeder construction. The students studied maps to learn about birds indigenous to their area of the country and their migratory habits; they learned about anatomy in order to determine the sizes of bird houses and openings, and they studied different kinds of preferred diets, colors, mating habits, and optimal locations. Display boards with attractive drawings and photographs were prepared to help market their products, and printed material (produced with the aid of desktop publishing software) accompanied each bird house and feeder that was sold. The students became specialists in the various subtopics, the tasks required to develop high quality products, and the procedures for researching, constructing, and marketing their products. Most of all, students developed a heightened level of environmental consciousness and a commitment to use their gifts and talents for constructive purposes.

The teacher/facilitator's role is crucial in escalating the content level of a cluster. Although it is not necessary for the teacher/facilitator to be thoroughly familiar with the content area(s) beforehand, it is necessary

(1) to have an interest in the topic and a "feel" for content escalation,

(2) to know how to find the resources that will advance the level of study,

(3) to organize cluster activities so that knowledge escalation is pursued as part and parcel of the hands-on activities, and

(4) to document the extent and level of advanced content that was pursued in the cluster.

Left to their own devices, the students in the bird house cluster might have skipped the underlying research on ornithology and marketing in favor of the sawing, hammering, and painting that was involved in the cluster's activities. If such were the case, the cluster experience would have prevented students from having opportunities for higher levels of learning. Indeed, it could have fallen prey to the "fun-and-games" criticism that a casual observer might have made.

In the guide that follows, we will offer suggestions for raising questions and obtaining resources that will assist teacher/facilitators in the process of content escalation. This process is obviously more demanding than merely guiding the hands-on aspects of a cluster, but it is also an opportunity for offering creative suggestions about the direction that the work of a cluster can take, and of guaranteeing that powerful learning is a hallmark of any cluster.

Guidelines for Developing an Enrichment Cluster

The following guidelines are designed to assist you in planning an au-

Enrichment Cluster Planning Guide

Joseph S. Renzulli

1. Getting-Started-Ideas	
2. General Area(s) of Knowledge	3. Specific Area(s) of Knowledge
4. The Key Questions	
5. Resources	
6. Title and Description	

thentic enrichment cluster and in writing a cluster description that will be both attractive and accurate so far as your expectations of students are concerned. Each item below is correlated with the box on the Enrichment Cluster Planning Guide (see above), and examples are provided to help you plan your own cluster.

As you review the guidelines and begin to fill out the Planning Guide, try to avoid specifying what students will do and learn in the cluster, at least until you have completed Item No. 4, and prior to writing the title and description of your cluster (Item No. 6).

1. Getting Started

Think about some of the things in which you have had a personal interest. Use these thoughts to write down a few words about an enrichment cluster you might like to offer. We will call these early thoughts your "getting-started-ideas." Here are a few topics that others have written down as getting- started-ideas: Poetry, Environmental Studies, Horses, Rock Wall Building, Landscaping, Science Fiction, Cartooning, Medieval Castles, Math Puzzles, Inventions, Film Making, Conservation, Model Airplane Design, World War II, Photography, Sports, Cooking, Architecture, City Planning, Bird Watching, History of Old Movies, Pottery, Ancient Rome. Don't worry if you are not certain about a topic at this early stage of the process. Write down several possibilities just to get the ball rolling.

2. General Area(s) of Knowledge

Use the following list to indicate the general area or areas of knowledge into which your getting-started-idea falls:

—Language Arts, Literature, and the Humanities
—The Arts
—Physical and Life Sciences
—Social Sciences
—Mathematics
—Computers
—Home Economics/Industrial Technology
—Physical Education
—Interdisciplinary Studies
—Other (Specify)

3. Specific Area(s) of Knowledge

Indicate the specific area(s) within the general area(s) upon which your cluster will focus. For example, if the general area is the arts, specific areas might be puppetry, fashion design, musical composition, modern dance, ceramics, or water colors. In the general area of the social sciences, specific areas might be public opinion polling, geography, local history, genealogy, demography, or animal behavior. In the general area of language arts, literature, and the humanities, specific areas might be short stories, poetry, journalism, play writing, biography, literary criticism, and essays on contemporary topics. An all-purpose cluster in any one of these general areas could include opportunities for different students or small groups to work on several specific areas

4. The Key Questions

The *sine qua non* (indispensable feature) of an enrichment cluster is that students act as practicing professionals in the development of a product or service. We can achieve this critical requirement by considering our getting-started-idea and the specific area(s) of knowledge from Numbers 1 and 3 above, and then answering the following five questions:

1. What do people with an interest in this area do?
2. What products do they create and/or what services do they provide?
3. What methods do they use to carry out their work?
4. What resources and materials are needed to produce high quality products and services?
5. How, and with whom, do they communicate the results of their work?
6. What steps need to be taken to have an impact on intended audiences?

[Note: These questions should also be used with students at the start of a cluster. In other words, students should have the opportunity to "discover" what you have found, and perhaps, to find some things that go beyond your own search.]

The answers to some of the above questions are obvious. Playwrights write plays and film-makers make films! The actual subjects of students' plays and films should be decided on by the students themselves after the cluster has gotten under way. We will discuss the process for exploring these kinds of decisions in a later section of this guide. But some areas are not so obvious. There are, for example, many different kinds of photographers (portrait, landscape, fashion, news, to mention a few); and there are dozens of aspects about World War II that might be topics for individual or small group research. We purposefully want to leave the range of options for products and services open so that even within a pre-selected topic area, students will still have the opportunity to make decisions about what they will produce.

Unless you are already an expert in the specific area of knowledge upon which your cluster will focus, answers to the above questions will require some digging on your part. This digging is important

because it will guide you in professionalizing the cluster, and it will provide you with background information to help escalate the content level and the level of inquiry of your cluster. Equally important is the personal growth that we, as adults, always experience when we learn something new, and the enthusiasm for a topic that almost always results from new learning. In other words, the affective value of learning and authentically applying new information on the parts of adults will unquestionably result in more informative teaching and in more enthusiasm for the work you do in the cluster. Some writers have said that this kind of growth- through-personal- involvement in new learning is a better kind of staff development than sitting through yet another workshop by yet another visiting expert!

5. Identifying Resources

There are only two ways to answer the questions listed above. The first is to find a practicing professional from the specific area of knowledge, and discuss the questions with him or her. The second is to find one or two books that describe the purpose and methodology of a particular field. Every field of knowledge has general (introductory) textbooks and "how-to" books that describe the actual work done in particular fields. Just examining the titles of the following books will give you an idea about the type of book for which you should be looking:

How To Trace Your Family Tree
The Restoration Manual
Usborne Introduction to Chemistry
The Amateur Meteorologist
Writing Family Histories and Memoirs
The Book of Where and How to Be Naturally Geographic
My Backyard History Book
The Amateur Naturalist: Explorations and Investigations
Understanding History: A Primer of Historical Method
Ecology: A Practical Introduction With Projects and Activities
Usborne Guide to Fashion Design
Experimenting With Inventions
Understanding and Collecting Rocks and Fossils
A Student's Guide to Volunteering
How To Write and Give A Speech
The Craft of Interviewing
Oral History: A Guide for Teachers
Getting Published
Kid Vid: Fundamentals of Video Production
A Students Guide To Conducting Social Science Research

These titles are just a few of the hundreds of books that focus on the how-to or investigative methodology of various subject matter areas. Most of them were written for young audiences or introductory investigators, and in most cases, they can be used as resource guides for students as well as adults who are facilitating a cluster. The level of a cluster can also be escalated by obtaining introductory college level textbooks in disciplines such as psychology, sociology, biology and the other fields of study typically included in college curricula. These books are especially valuable for identifying basic principles, major concepts, and the types of topics that are typically studied in a particular discipline. Some of these books include laboratory manuals that guide students through actual research activities in particular fields of study.

Three Clicks On the Web.

A marvelous resource for all types of advanced level resources is the Internet and the World Wide Web. I picked a topic in which I have an interest but limited background, and conducted a search. I started by going to the search engine, Yahoo, and clicked on social science. In addition to listing numerous topics related to this general field, a dialogue box allowed me to type in and search for the topic, "oral history." This second click yielded 52 site matches for oral history. I then clicked on one of these matches entitled "Oral History Questions." To my wonder and amazement, I was presented with and was able to print out four pages of questions that could be used in an oral history interview. Among the other 50 sites are descriptions of oral history projects, oral history associations and university centers that provide resources to interested persons, and subtopics such as Vietnam Veterans and the Oral History of Jazz. Wow! What a resource. The world of advanced level information is literally at our fingertips, and we need to use it so we can escalate the level of content and investigative methodology in our enrichment clusters and in all of our teaching activities.

6. Title and Description

Now that you have had the opportunity to explore the key questions and examine resources related to your specific area of knowledge, it is time to think of a creative title for your cluster and to write a cluster description. The title should be both snappy and, at the same time, give some indication that the cluster will deal with serious subject matter. Sometimes this twofold purpose can be accomplished by using a colon in the title. Thus, for example, a title such as *Dig That Dance: A Choreographic Workshop* attracts attention and points out a recognized area of the arts. Other titles that accomplish this purpose are: *Lights, Camera Action: Techniques of Video Production; Dear Mr. Shakespeare: Play Writing for Young Authors; and The Mighty Duck Savers: Preserving the Ecology of Local Wetlands.* Titles can also define the type of work that might be done in a cluster. Examples are: *The Desktop Publishing Company; The Local History Research Team; The Female Mathematics Support Group;* and *The Creative Furniture Design Guild.*

The cluster description should also convey two messages. First, the description should point out the kinds of questions that might be raised and/or the type of information that will be studied. Second, and perhaps most important so far as focus is concerned, are the types of products that will be produced in the cluster. Remember, the sine qua non of a cluster is that students will produce a product or prepare some kind of service. It is essential that this feature be mentioned in your cluster description. Here are a few examples:

• ***Flight School: Designing and Building Your Own Aircraft***
Basic principles of aerodynamics will be studied to learn what keeps airplanes in the air. You will design, build, and test fly your own model plane. We will have a contest to see whose plane flies the highest, farthest, and longest.

• ***Gamers Institute***
Explore the world of math games and puzzles. Investigate visual games and optical illusions, dice games and probability, origami, games of logic, problem solving brain teasers, and more. Learn how a games company develops their popular games. Create your own board game or puzzle, and share with the group in a "Game Meet".

Conclusion: The Importance of Authentic Learning

Authentic learning is important for several reasons. First, schools should be enjoyable places that students want to attend rather than places they

(from TREFFINGER, page 8)

endure as part of their journey toward assimilation into the job market and the adult world. Second, schools should be places where students participate in and prepare for intelligent, creative, and effective living. This type of living includes learning how to analyze, criticize, and select from among alternative sources of information and courses of action; how to think effectively about unpredictable personal and interpersonal problems; how to live harmoniously with one another while remaining true to one's own emerging system of attitudes, beliefs, and values; and how to confront, clarify, and act upon problems and situations in constructive and creative ways. Finally, authentic learning is important because our society and democratic way of life are dependent upon an unlimited reservoir of creative and effective people who know how to put knowledge to work in real-world situations.

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18. Placing our concern for appropriate and challenging programming in the forefront of our work (e.g., Treffinger, 1998) leads us to move away from the traditional questions associated with "identification" (is the gifted or not? What criteria qualify the student for designation or selection?), and opens the door for a more powerful and dynamic process of identifying ways to respond to students' strengths, talents, and interests more effectively.

19. Talent spotting emphasizes searching for and documenting students' unique characteristics and their related instructional needs, enabling us to focus on bringing out the best in all students.

20. Profiling is a useful process for clarifying and describing all students' strengths and talents in relation to *action planning for talent development.* It uses formal and informal sources (e.g., test data, rating scales, observations and performance tasks, portfolios, and self-report data) to guide planning for talent development.

21. Helping students to recognize and understand their own emerging talents and then to use their self-knowledge in personal goal setting and career planning are also important outcomes of profiling and action planning.

22. Commitments to continuous improvement and innovation require on-going professional development for all staff members, consistent with principles of adult learning and effective leadership.

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(from MEADOR, page10)

Creative Processing Styles for the Classroom

—Using Wide Categories

Students may find ample opportunities for creative thinking and problem-solving when reading about conflicts in the newspaper. For example, students reading a series of articles about a dispute between county officials, the company hired to build a new road, and citizens who traverse the road might use creative thinking to arrive at a workable solution acceptable to all parties. Students would have the opportunity to use wide categories, seeing the "forest" instead of the "trees," and look at broad possibilities rather than focusing on the problems of a single group of players in this conflict.

—Questioning Norms and Assumptions in Their Domain

Creative thinkers may emerge when science teachers ask students to analyze a scientific explanation and discuss its strengths and weaknesses. Teachers may ask students to discuss the strengths and weaknesses of the theory of gravity as it applies to a feather and a solid ball dropped from the same height at the same time. Even though students will consider the normal explanation, or entrenched way of thinking, that gravity would cause both objects to hit the ground at the same time, they must also think creatively, explore the plausible synthesis of other theories and the theory of gravity, and present their analysis.

—Being Alert to Novelty and Gaps in Knowledge

Problem-solving is a major component in mathematics education, and it provides students with opportunities to use several components of creative thinking. For example, students utilize divergent thinking as they consider possible strategy options for seeking a solution and use convergent thinking when they make decisions during the problem-solving process. Students think creatively as they recognize gaps in knowledge about the problem and plan means for retrieving needed information.

Figure 1

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(from SMUTNY, page 12)

A Final Note

The gifted population in kindergarten through third grade do not always stand out. In many students, their youth makes talent appear elusive and inconsistent. Teachers are baffled that a young child who reads advanced texts can hardly spell, or that a child with an exceptional gift in music cannot read notes on a page. Other young talented students may be learning English or feel out of place because of culture or be behind the rest of the class because of poverty or some other disadvantage. Covering a wider ground of talent than formalized testing will help you to gain a truer picture of the children in your classroom and enable you to respond more effectively to their educational needs.

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(from CAUBLE, WHITLEY, & GOODWIN, page 16)

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(from MOUNTJOY, page 18)

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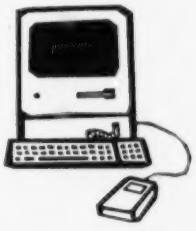
Luisa Arce Rogalla, teacher at Kimberlin Academy magnet school for gifted and talented students, has made numerous presentations to parents, community members, and teachers.

Jan Roland, teacher at Hillside Academy magnet school for gifted and talented students, has presented information to Hispanic community organizations and conferences.

Will Ramos, teacher at Walnut Glen Academy magnet school for gifted and talented students,has presented at the National Association of Bilingual Educators.



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Researchers' Reflections on the Field of Gifted Education: *Issues for the New Millennium*

Susan K. Johnsen

"The more things change, the more they remain the same." —*Unknown change agent*

During the past century, professionals have written about the issues that face the field of gifted education from identification to curriculum differentiation. These pioneers often challenged societal myths and persevered when funding was virtually nonexistent. As we approach the end of this millennium, these past events may provide insight in identifying the important issues for the next millennium. For this review, articles published in *Gifted Child Quarterly, Journal for the Education of the Gifted,* and *Roeper Review* during the past thirteen years were examined. To be included, the article had to focus on an historical examination of issues and events that influenced gifted education during the past century. I excluded articles that provided a historical overview of a single program, programs outside of the United States, and longitudinal studies of gifted individuals. I did include articles about pioneers and scholars who made significant contributions to the field of gifted education. As Borland (1990) mentioned, I did not find a comprehensive history of the gifted child movement. I did find summaries of historical events, legislation and litigation, and curriculum.

> When the nation feels vulnerable from external forces, then gifted education flourishes; when the nation is concerned with social inequities, then money is diverted away from gifted education.

Authors tended to disagree on the originator of gifted education. Goldberg (1986) cited Thomas Jefferson's proposal for free public schools for "able boys;" Silverman (1989) cited Sir Francis Galton's *Hereditary Genius* (1869), and Borland (1990) identified Yoder's (1894) pioneering study, "The Story of the Boyhood of Great Men," as the seminal work. While these differences were present, those who examined the history of gifted education frequently mentioned these pioneers—Galton, Goddard, Terman, and Hollingworth. Galton, Goddard and Terman developed instruments for measuring intelligence. At Stanford Terman modified the Binet-Simon tests for use in the United States and initiated a longitudinal study of 1528 gifted children that was published in the *Genetic Studies of Genius* series beginning in 1925. While Galton, Goddard and Terman assumed a strong hereditarian view of giftedness, Hollingworth challenged their assumptions about individual differences and the inferiority of women through her observational studies. She concluded that "eminence and superior mental ability are not identical" since "sociological factors might limit achievement" (cited in Silverman, 1989, p. 92). She focused her research on gifted children's education, particularly those with intelligence quotients greater than 180, their vulnerabilities, and their need for nurturance. While cited by only one article, studies were also conducted with African-American children during the 20s and 30s (Kearney & LeBlanc, 1993). Excluded from the early literature, these researchers similar to Hollingworth also concluded that "where sufficient provision is made for optimum development of Negro children, the gifted Negro child will emerge" (p. 133).

It was not until the 50s, however, that more widespread research was published on gifted and talented education (Abraham, 1986). At Columbia, Passow initiated the Talented Youth Project in 1954 (Kirschenbaum, 1998; Passow, 1986). Guilford, using the relatively new statistical procedure of factor analysis, identified divergent production as a separate factor not measured by intelligence tests. At the national level, Rickover recommended a separate educational system for the gifted, but interest waned until the late 1950s with the advent of Sputnik (Abraham, 1986). Following Sputnik, more reports about the quality of American education were issued; the NEA initiated a talented youth project and Governor's Schools were created. Acceleration and ability grouping became an administrative arrangement in many public schools. However, within five years funding was redirected. Legislation and litigation during the 60s and 70s tended to focus on equity issues—Head Start, Education for All Handicapped Children Act, Section 504, and PARC vs. Pennsylvania (Gallagher, 1986; Ford, Russo, & Harris, 1995). While interest in the general field of gifted education declined, conferences and publications on gifted handicapped increased (Johnsen & Corn, 1989). Interest was not renewed until federal legislation in 1969, the Gifted and Talented Children's Education Assistance Act, the 1972 Marland report, and the initiation of the Leadership Training Institute. While the Office of Gifted and Talented was opened in 1978, Reagan dismantled it with a consolidated categorical funding program. It was not until the Javits Act (1988) that federal money was specifically allocated to gifted and talented children. Under this legislation, the National Research Center for Gifted and Talented was established during the 1990s.

Goldberg (1986) explained these frustrating cycles of interest in gifted [illegible]ation in her article. Citing Tannenbaum, she noted that when the nat[illegible] feels vulnerable from external forces, then gifted education flourishes; when the nation is concerned with social inequities, then money is diverted away from gifted education. Gallagher (1986) also reflected that the government tends to respond to crises rather than to the development of long-term goals. Other researchers concluded that until gifted education has a federal mandate, its support will fluctuate and the educational entitlement of gifted students will not advance (Ford, Russo, & Harris, 1995; Zirkel & Steven, 1987).

The concept of differentiated curriculum has been elaborated by researchers and challenged by others during this past century. Using the early work of Hollingworth and Goddard, curriculum adaptations during the 60s were divided primarily between the administrative arrangements of acceleration and enrichment. Only Ward (1961) related curricular adaptations to gifted student characteristics. This focus on individual differences was supported by the research about expert vs. novice performance that was also begun during the 1960s (Hong, 1999). The Marland Report (1972) identified characteristics for a differenti-

ated curriculum that included both the administrative arrangements of special grouping and the focus on the development of higher cognitive processes. Most curriculum models that were popular in the 60s and 70s were mainly process-oriented (Passow, 1986). The only two content-specific models were Johns Hopkins SMPY and MEGSSS mathematics program. In 1981, the First National Curriculum Conference identified seven principles that addressed both content and process that are still referenced today. During the 90s, process-oriented models have been challenged because of limited research support. With national standards and achievement-oriented assessments, the differentiated curriculum pendulum is swinging away from the earlier enrichment models toward more rigorous content models. This change is supported by some (Margolin, 1996) and decredited by others (Grant & Piechowski, 1999). Some fear that a common, rigorous curriculum for all might not result in an appropriate education for gifted and talented that would elicit a learner response "commensurate with gifts or talents" (Passow et al., 1988, Herzog, 1998, p. 214).

In summarizing the current status of the field of gifted education, these researchers mention many of the same issues that are current today: grouping, gender differences, technology, early identification, standards for identification, fields of talent, parent education, preparation of regular classroom teachers, and funding (Abraham, 1986; Goldberg, 1986; Passow, 1986). This repetition led Passow to conclude that issues appear to be perennial—what was said in the past is still relevant today (Kirschenbaum, 1998; Passow, 1986).

Abraham, W. (1986). From Goddard to Gallagher—and beyond. *Roeper Review, 8*, 218-222. Abraham reviewed the early history of gifted education in this article, outlining leaders, trends, issues, and its future. The author reported that before the 1950s, little research was published on gifted and talented education. References related only to Terman's *Genetic Studies of Genius*, Leta Hollingworth, and Goddard's Major Work Classes in Cleveland. During the 1950s, Rickover recommended a separate educational system for the gifted and interest escalated after Sputnik. The author identified these issues that he believed should have been resolved earlier: flexible school entry, grouping, gender differences, technology, educational neglect, early identification, and funding. In the remaining part of the article, Abraham described seven essential components to the future of gifted education that included minority and handicapped children, parent education and involvement, child selection, community awareness, preparation of regular classroom teachers, and a National "Think Tank" of Concerned Persons.

Borland, J. H. (1990). Leta Hollingworth's contributions to the psychology and education of the gifted. *Roeper Review, 12*, 162-166. Borland reviewed Hollingworth's contributions to the field of gifted that included the first college course on the gifted (1918), the first comprehensive text (1926), the direct observation of gifted persons, the development of the Speyer School at Columbia (1922), the design of enrichment units, and her challenge to Terman's stereotypes of gifted children as "happy, healthy, popular, and destined for greatness" without appropriate nurturance. Borland concluded that the field of gifted education has been in place since Yoder's (1894) pioneering study, "The Story of the Boyhood of Great Men," but that a comprehensive history of the gifted child movement has not been conducted.

Ford, D. Y., Russo, C. J., & Harris III, J. J. (1995). Meeting the educational needs of the gifted: A legal imperative. *Roeper Review, 17*, 224-228. This article provided a summary of the law for exceptional students and offered recommendations to ensure appropriate services for gifted students. Beginning with PARC (1971, 1972) and the Mills case in the District of Columbia (1972), the authors identified two major principles: children with disabilities have the right to receive a free and appropriate education based on their individualized needs and are entitled to procedural safeguards. Section 504 (1973) then protected all individuals with disabilities. P.L. 94-142 and later IDEA provided comprehensive rights for students with disabilities. Unfortunately in the Rowley case (1982), the Supreme Court established a floor of education that had the effect of "relegating the educational rights of gifted children to a low priority" (p. 226). In 1969, model programs for gifted and talented were funded under Titles III and IV of ESEA. After the Marland Report (1972), the first Office of Gifted and Talented was established and Title IV monies were made available for gifted education. While the Gifted and Talented Children Act of 1978 extended funding, all federal sources of funds for gifted education were placed in block funds under the Omnibus Budget Reconciliation Act of 1981. The Office of Gifted and Talented was closed as well. It was not until the Javits Act of 1988 that gifted education was again funded. The authors concluded that until gifted education has a federal mandate, its support will fluctuate.

Gallagher, J. J. (1986). Equity vs. excellence: An educational drama. *Roeper Review, 8*, 233-234. Gallagher described the conflict in education over equity vs. excellence. The emphasis on equity during the 1960s and 1970s were reflected in Head Start and P.L. 94-142, the Education for All Handicapped Children Act. While money at the U. S. Office of Education provided over a billion dollars for handicapped children, no money was allocated for gifted children during the 1970s and early 1980s. Gallagher reflected that the government tends to respond to crises rather than to the development of long-term goals. He concluded with strategies for policy support.

Goldberg, M. L. (1986). Issues in the education of gifted and talented children: Part 1. *Roeper Review, 8*, 226-233. Goldberg examined historical and current issues in the field of gifted education. She traced the initiation of gifted education to Thomas Jefferson who proposed that free public schools be initiated for able boys who were too poor to pay for education. Goldberg believes that gifted education tends to be influenced by social and political forces. Citing Tannenbaum, she noted that when the nation feels vulnerable from external forces, then gifted education flourishes; when the nation is concerned with social inequities, then money is diverted away from gifted education. She reviewed three issues that relate to the determination of giftedness and talent: the identification of fields of talent; the standards for identification; and the criteria for the selection of assessment procedures. Historically, fields of talent are identified by national needs such as Sputnik. Standards are variable. For example, Conant proposed the top 5% identified as gifted and the top 20% as academically talented. While others define creatively gifted as those in the top 20% or the "number who can be accommodated by a particular school, class or program" (p. 229). Since performance varies for disadvantaged children, Goldberg suggested different criteria, situations, and/or areas of giftedness. The author also suggested different types of measures to assess aptitude in various fields. The author concluded by posing questions for research in the three issue areas.

Grant, B. A., & Piechowski, M. M. (1999). Theories and the good: Toward child-centered gifted education. *Gifted Child Quarterly, 43*, 4-12. The authors summarized past theories and discussed their value

in understanding gifted children. They included philosophers and educators in their list of people who described the purpose of education and the role of the teacher.

Hertzog, N. B. (1998). Open-ended activities: Differentiation through learner responses. *Gifted Child Quarterly, 42*, 212-227. This article reviewed the meaning of differentiation over the past two decades. In 1961, Virgil Ward provided a theoretical framework that related curriculum propositions to the characteristics of gifted children. These included the emphasis on "enduring methods and sources of learning" and "continuous, ongoing acquisition of data pertinent to problem situations (p. 214)." The Marland Report (1972) identified three characteristics for a differentiated curriculum--higher cognitive processes, instructional strategies that accommodate content and learning styles, and special grouping arrangements. In 1976, the Office of Gifted Education defined differentiated education as a process of instruction that is "integrated into the school program and is adaptable to varying levels of individual learning response (p. 214)." Renzulli (1977) emphasized modifications that are beyond the regular curriculum, that address student interests and styles, and that allow students to pursue topics. In 1981, the First National Curriculum Conference identified seven principles that focused on curriculum for gifted/talented that are still frequently cited today. Maker (1982) suggested that the curriculum be accelerated, complex beyond the regular curriculum, match student interests, and address abstract concepts. Little research, however, has been conducted that addresses the principles of curriculum differentiation. Therefore the remainder of the article reported a study regarding the nature of open-ended activities that is related to Passow's definition of differentiated curriculum—the curriculum should elicit a learner response that is "commensurate with gifts or talents."

Hong, E. (1999). Studying the mind of the gifted. *Roeper Review, 21*, 244-252. Research regarding expert performance began during the 1960s. Differences between experts and novices noted in research are "amount, accessibility, and organization of knowledge, mental representations, accuracy and speed of information processing, and efficiency of cognitive strategies and metacognitive skills" (p. 245). The article then summarized approaches to studying the mind and encouraged more research in the area.

Johnsen, S. K., & Corn, A. L. (1989). The past, present, and future of education for gifted children with sensory and/or physical disabilities. *Roeper Review, 12*, 13-23. This article described the history of the gifted handicapped field. While Leta Hollingworth described disabled individuals in her book *Special Talents and Defects*, it was not until the 1970s that this population began to be recognized. In 1976 the first National Topical Conference on Handicapped Gifted and Talented Students was held. By 1977, the CEC distributed a Fact Sheet on Gifted Handicapped and TAG established a special committee on the Gifted Handicapped. Maker (1977) wrote the first book, *Providing Programs for the Gifted Handicapped*. With IEP's and Public Law 94-142, more attention was paid to disabled students with strengths or gifts. During the 1970s, more research was conducted with special populations but interest waned during the 1980s as funding dissipated. The reminder of the article discussed characteristics of programs for the gifted disabled.

Kearney, K., & LeBlanc, J. (1993). Forgotten pioneers in the study of gifted African-Americans. *Roeper Review, 15*, 192-199. These authors reviewed the work of five scholars who studied gifted African-American children. At the University of Chicago, Bond (1927) found evidence to suggest that exceptional black children, those scoring 130 IQ on the Binet-Simon Scales, had been encouraged by their parents to read. He believed that early enrichment might compensate for poor schooling. Proctor (1929), a social worker, identified 30 exceptional children in the Washington D.C. schools and described the poor quality of their education and limited access to enrichment. Terwilliger (1934), one of Hollingworth's students, studied 10 gifted children from Harlem and concluded that 90% of the group selected professional occupations. Jenkins (1935), a student of Paul Witty, studied seven racially segregated elementary schools on the south side of Chicago. Through a multi-level screening process 103 gifted children were located. He concluded that "where sufficient provision is made for optimum development of Negro children, the gifted Negro child will emerge" (p. 1993). Finally, Theman (1942), another student of Paul Witty, conducted a follow-up study of Jenkins' children. She found that the students were highly interested in school but had a much lower achievement test rating than the gifted white boys and girls in Terman's study. The authors concluded these studies were not integrated into the field because of the established social, political, and academic paradigms of the 1930s.

Kirschenbaum, R. J. (1998). Interview with Dr. A. Harry Passow. *Gifted Child Quarterly, 42*, 194-199. Through his involvement in the field of gifted education since the 1950s, Dr. Passow provided a valuable perspective of the field of gifted education. Passow discussed his research at Talented Youth Project begun at Teachers College in the 50s, Columbia University; the National Educational Association's Conference on the academically talented following the launch of Sputnik; the National Defense Education Act of 1958 that stimulated curriculum reform; the UNESCO Institute that focused on measuring international levels of achievement; and national reports such as *A Nation at Risk*. In his discussion, he addressed such issues as equity vs. excellence; teacher training; various conceptions of giftedness; administrative arrangements vs. curriculum differentiation; assessment; national curriculums; and his definition for a gifted person: "an individual with potential for outstanding achievement in a socially valuable area" (p. 198). He concluded the interview by stating that what was said in the past is still relevant today.

Margolin, L. (1996). A pedagogy of privilege. *Journal for the Education of the Gifted, 19*, 164-180. Margolin reviewed the early gifted-child curriculum in this article. This curriculum primarily focused on promoting students ahead of their peers or placing them in separate rapid-advancement classes. Goddard and later researchers, however, found that this rapid advancement was not based on the "character and needs of gifted children" (p. 166). The focus of gifted education changed to creating a curriculum that nurtured the characteristics of the gifted learner. From a survey of introductory texts in gifted education, the author found that only 11% of the pages dealt with teaching basic academic subject matter. The author concluded that it is not what is taught but "from where it is taught and who is taught" (p. 177).

Morelock, M. J. (1996). On the nature of giftedness and talent: Imposing order on chaos. *Roeper Review, 19*, 4-12. This article traced the history of theoretical concepts, identified significant empirical studies, and proposed a theoretical framework for the field of gifted education. Morelock reviewed Galton, Binet and Terman, and Hollingworth's conceptions of giftedness. While Galton, Binet and Terman all took a genetic view of intelligence, they all understood that environment as-

sumed an important role. Hollingworth examined the social-emotional difficulties of gifted children and also emphasized the importance of those who nurtured their development. All viewed gifted students as having a "generalized capacity" that surpassed peers of similar chronological age and as needing support. The field was influenced by the research of Terman (the IQ test), Guilford (divergent thinking or creativity), the Marland report (federal definition), Feldman (child prodigies), Gardner and Sternberg (broader conceptions of intelligence), Vygotsky (social construction), and those who have studied IQ-independent and dependent abilities. The author concluded her article by comparing and contrasting the Talent Development Movement with the Columbus Group Movement. She concluded that both the concepts of giftedness and talent are social constructs, refer to different phenomena, and are educationally relevant.

Passow, A. H. (1986). Reflections on three decades of education of the gifted. *Roeper Review, 8*, 223-226. Passow reviewed the past history of education beginning with his 1954 Talented Youth Project at Teachers College. He suggested that the 1955 publication *Planning for Talented Youth: Considerations for Public School* might still be timely since the issues remain unchanged. While the launching of Sputnik produced interest, the Marland Report of 1972 could still describe the inadequacy of services to gifted students. It described the need for a "differentiated curriculum." Passow then reviewed the history of "differentiated curriculum." He first described four types of curriculum: general education, specialized, subliminal, and non-school. During the 1960s curriculum adaptations were divided between acceleration and enrichment. Only Ward (1961) related curricular adaptations to gifted student characteristics. Curriculum models that were popular during the 1960s and 1970s were mainly process-oriented and included Bloom's Taxonomy, the Structure of the Intellect, Synectics, Phenix's realms of meaning, creative problem solving, multiple talents, Taba's cognitive function, Kohlberg's moral development, Renzulli's enrichment triad, and Williams' total creativity program. The only two content- specific models were Johns Hopkins SMPY and MEGSSS mathematics program. He concluded by saying that issues appeared to be perennial and that gifted educators will always need to concern themselves with "legislation, funding, mandates, etc. but then [without them] there would be no challenge and no excitement!" (p. 226).

Passow, A. H., Richert, E. S., Roedell, W. C., Roeper, A., Barrons, G., Braunstein, D., Doyle, P., & Lawson, S. (1988). Open forum. *Roeper Review, 10*, 212-218. This article summarized the opening session of the Annual Meeting of the Roeper Review Editorial Advisory Board. Passow indicated that educational reform has been encouraged since the early 1970s. By the 1980s, 13 reports had been published. Many of the reports address "excellence." Excellence meant for individuals to perform on the "boundary of individual ability;" for colleges to set high expectations; and for society to be prepared "to respond to the challenges of a rapidly changing world" (*A Nation at Risk*, 1983; cited on pp. 212-213). John Gardner indicated that excellence related to actual achievement, the value of the field, and its encouragement. These reports did not address the education of gifted and talented directly but did stimulate a large number of state and local task force initiatives. The focus was on the establishment of more rigorous academic requirements. The participants believed that such focus on a common, rigorous curriculum might not result in an appropriate education for gifted and talented children.

Silverman, L. K. (1989). It all began with Leta Hollingworth: The story of giftedness in women. *Journal for the Education of the Gifted, 12*, 86-98. Silverman reported that the study of giftedness began with Sir Francis Galton's *Hereditary Genius* (1869). Galton reported that males outperformed women on all dimensions. Hollingworth challenged Galton and many of the conclusions of earlier researchers. She concluded that "eminence and superior mental ability are not identical" since "sociological factors might limit achievement" (p. 92). While Terman was interested in the description of giftedness, Hollingworth was more concerned with their education. Hollingworth advocated special classes for gifted because she believed that enrichment in the regular classroom was mostly busy work. Silverman concluded that Hollingworth's work is still a helpful guide for educators of gifted students today.

Tannenbaum, A. J. (1986). Reflection and refraction of light on the gifted. *Roeper Review, 8*, 212-218. This was the introductory article to a special issue that reviewed the field of gifted education for the past 25 years. Tannenbaum discussed four issues that continue to confront gifted education: IQ, provisions for gifted education, the nurturance of talent, and anti-intellectualism. He then described positive influences on the field such as increase in funding, leadership through the Leadership Training Institute (initiated during the 1970s), the development of graduate programs (Graduate Leadership Education Project), advocacy groups, instructional models, acceleration, and enrichment.

Torrance, E. P. (1986). Glimpses of the "promised land." *Roeper Review, 8*, 246-251. In this article Torrance reflected on his career and ideas that he believed would continue without his presence. These ideas included future problem solving (initiated in 1974), the Torrance Tests of Creative Thinking (1966), international networks, the Torrance Center for Gifted, and his instructional model. He believed that other ideas that might still have an opportunity to be pursued included a broader concept of intelligence, creative reading, the teaching of research and inventive skills, sociodrama, the inclusion of the intuitive domain, intergenerational learning, the Sounds and Images tests, inclusion of creative instructional materials, and identifying areas that relate to gifted children's interests. He concluded with ideas that have been rejected, ignored, or forgotten such as levels of consciousness, gifted disadvantaged, career-future awareness models, creative activities for the elderly, and the healing qualities of creativity.

Vialle, W. (1994). "Termanal" science? The work of Lewis Terman revisited. *Roeper Review, 17*, 32-38. Vialle reviewed Terman's work within the framework of his time and space. She reviewed his positions on gender, race, social class, and intelligence testing. Given the hereditarian views of his time, Terman was interested in human differences and believed in special classes, special curricula, and special classroom procedures for "every form of exceptional talent" (p. 37).

Ward, V. S. (1986). Theory in the practice of differential education for the gifted. *Roeper Review, 8*, 263-271. At the beginning of this article, Ward presented five propositions on the field of Differential Education for the Gifted. He then reviewed the background history for these propositions. Beginning with his own dissertation research in the early 1950's, he reviewed theory in actual form within these historical events: professional training in differential education at the University of Virginia, the Academically Talented Student Project of the National Education Association in 1958, the Southern Regional Project for Education of the Gifted, and the Governor's School of North Carolina. He

concluded that the field had become politicized and needed to nurture new leadership and incorporate advances in the arts, sciences, and new technologies.

Zirkel, P. A., & Steven, P. L. (1987). The law concerning public education of gifted students. ***Journal for the Education of the Gifted, 10,*** **305-322.** This article provided a comprehensive overview of law concerning the education of gifted students on the federal and state levels. The U. S. Office of Education established a section on Exceptional Children and Youth in 1931, yet interest waned until the late 1950s with the advent of Sputnik. Federal funding was redirected in the 1960s until the first federal legislation in 1969, the Gifted and Talented Children's Education Assistance Act. Congress passed similar acts in 1974 and 1978. The 1974 Act established an Office of Gifted and Talented and the 1978 Act defined "gifted and talented." The Office was dismantled when Reagan consolidated categorical funding into the Chapter II block grant program. Approximately 44 states had legislation or regulations regarding gifted students in 1980; 17 required IEPs and/or due process. The largest number of due process cases have been reported in Pennsylvania since it included "gifted and talented school-aged persons" under its 1975 regulations that defined "exceptional persons." The authors reported that most of these decisions have not enlarged the educational entitlement of gifted students. The difference between the advancement of handicapped students vs. gifted students can be attributed to the absence of a federal mandate.

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(from ELAM, page 2)

Thank you to all of you parents who have supported education with countless volunteer hours. Thank you to all of you who led student enrichment programs, coordinated teacher appreciation luncheons, chaired parent support groups, conducted fund raisers, worked on committees, helped at school, and chauffeured flocks of children to multitudinous destinations. Thank you for giving of your time and yourself for the benefit of all of the children. Thank you for guiding and nurturing and parenting your own.

Thank you to all of you school administrators and support faculty who have championed the needs of all children including the gifted. Thank you for facilitating appropriate educational services for each and every individual student. Thank you for your expertise and your unswerving principles in the face of political whirlwinds.

Thank you to all of you legislators who have acted on behalf of educating all children to their individual maximum potentials. Thank you for your healthy debate and your deliberations. Thank you for your time and your endeavors enabling all children to strive toward their personal best.

Thank you to all of you community members who have endorsed education with your vocal advocacy, your supportive actions, and your informed vote.

Together, as we march toward the new millennium, we are steadfast in our commitment to our core focus, our blazing star. Our mission as the Texas Association for the Gifted and Talented is to promote awareness of the unique social, emotion, and intellectual needs of gifted children and to impact the development of educational services to meet those needs.

Develop the gifts, enrich the future.

(from LUCKSINGER, page 14)

Boyd, L. N. (1992). The needs assessment - who needs it? *Roeper Review, 15*(2), 64-66.

Clark, B. (1988). *Growing up gifted.* Columbus, OH: Merrill.

Davis, G. A., & Rimm, S. B. (1989). *Education of the gifted and talented.* Englewood Cliffs, NJ: Prentice Hall.

Renyi, J. (1998). Building learning into the teaching job. *Educational Leadership, 55*(5), 70-74.

Texas State Plan for the Education of Gifted/Talented Students, (1996). http://www.tea.state.tx.us/gted

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(from MCLENDON, page 3)

of training delineated in SBOE rule represents the only additional training required for teachers of gifted students. If adopted, the amendment to SBOE rule 89.2 will further strengthen instructional services for gifted/talented students.

Accountability: Watchword for G/T Advocates

The appropriation rider approved by the Texas Legislature in 1999 requires TEA to develop an assessment system and statewide standards for gifted and talented students at all grade levels, beginning with high school exit-level standards for the performance of gifted and talented students in the areas of mathematics, science, social studies and language arts. With the exit-level pilot to be completed by August, 2001, this significant piece of legislation signals both challenge and opportunity for the gifted education community. Advocates must adopt "accountability" as their watchword, monitoring closely the first phase of the g/t legislation authored by Representative Scott Hochberg (Houston, District 132). Success in this first phase will ensure legislative support for moving on to the next-establishing statewide performance standards for middle and elementary gifted/talented students as part of the assessment system. Should the state fail to develop performance standards as part of a statewide assessment system to evaluate programs for gifted/talented students, accountability will continue to be a major problem statewide. Over time, the accountability issue could result in the loss of legislative support and, eventually, loss of funding for gifted education.

Naysayers have already begun protesting the standards development initiative, "Not another test!" They are correct; it is "not another test!" Rather, it is an assessment system based on statewide performance standards for gifted/talented students. We must not allow the purpose of this important legislation to be misinterpreted or negated by those who would deny gifted/talented students the same opportunity afforded all other children in the public school system-the right to an education commensurate with their ability, one that challenges them to the limits of their full potential. (Evelyn Hiatt, TEA director of Advanced Academic Services, will present an information session on the new "Standards Legislation" at the TAGT annual conference, December 1- 4, in Houston).

Leading in the 21st Century

As we approach the new millennium, the need for a strong and courageous TAGT will be greater than ever. The extent of influence that TAGT may have on the future of gifted/talented students will depend on the quality of its leadership. Leading the nation's largest organization of advocates, dedicated to improving services to meet the unique needs of gifted/talented students, is an awesome responsibility. . . and an immensely rewarding one. Other states have looked to Texas for leadership in gifted education. What we are able to accomplish in our state for gifted/talented students will resound nationally. In a *Leadership Edge Series* monograph published by the American Society of Association Executives, author Sheila Murray Bethel identifies seven leadership skills essential for survival and success in the 21st century. Confirmed by a survey of hundreds of private and public sector organizations throughout the world, Bethel says heading the list is "servant leadership." Of all the qualities needed for success in the new millennium, association executives worldwide, agree that a commitment to service is the most vital. Other important skills for the 21st century leader include "creating and communicating vision," followed by "promoting and initiating change," "building partnerships," "valuing diversity," "managing information and technology," and "achieving balance." It has been my experience that nothing we have achieved for gifted/talented students has come without considerable challenge. I do not expect things to change in that regard. Therefore, the TAGT leadership must have the courage to make decisions in the face of uncertainty and to embrace challenge when the familiar is much more comfortable.

In retrospect I see how fortunate I was those first years with TAGT. I enjoyed the wise counsel of two venerable leaders, the support of the TAGT executive board, which included outstanding leaders in gifted education, and the backing of a strong, uniquely dedicated membership of parents and educators, wholly committed to the welfare of gifted/talented children. The passing of those early mentors notwithstanding, the support system is still in place and ready to work with my successor who will arrive on January 1, 2000. In this my final column for *Tempo*, much like the first one, I have struggled to find words-this time, words for my departure. At the brink of the new millennium, maybe just this-I am confident that by focusing on the future, retaining only the best of the past, TAGT will meet with untold success in its mission for gifted/talented children.

Q&A Answers to Your Questions

Donna Corley

Question: Help! My daughter is assigned to an AP class this fall. What does AP mean?
Answer: AP stands for Advanced Placement. It is a program that started out of a concern that high achieving students were not getting all of their needs met in the typical high school setting. Currently Advanced Placement classes are available for high achieving and gifted students. Since 1955, the College Board has assumed responsibility for the Advanced Placement Program. This program currently offers 32 courses, with more promised. Additional information on Advanced Placement can found on the College Board Website at www.collegeboard.org. This site offers a tremendous amount of information ranging from the history of AP to how the AP courses and exams are developed, how grades are determined, how tests are scored, and how the data is analyzed. Related research articles are offered along with opportunities to order books for teachers, parents, and students.

Question: I am an elementary G/T pull out teacher in a large district. I feel that I work with non-supportive regular classroom teachers and administrators who view my job as an "easy" job and who pull me away from my G/T duties to substitute in another class, etc. I have even been asked to answer the phones. Some regular classroom teachers resent the students missing TAAS practice. I teach art in the afternoon so I do not have a lot of flexibility in scheduling the G/T pullouts that are expected in the morning. Any suggestions?
Answer: Cooperation is born out of understanding and the sharing of a common goal. The administration at your school and the regular classroom teachers share a common goal with you and that is the success of the students. They may not fully understand how you are defining success for your G/T students. One suggestion might be to meet "off territory," in other words, in a neutral place that is not the administrator's office, not the regular classroom teacher's classroom, or your meeting area. All of you can discuss your goals for the coming year and how best to meet those goals. Take the time to identify like goals so that efforts to meet those goals can be coordinated and repetition eliminated. Many times professionals will be willing to shorten or even release certain instructional obligations if they see that it is too repetitive. If you have district and/or campus goals, this would be a good place to start. It is also important to identify goals that are different so that efforts can be made to support each other. (Be sure to use the *Texas State Plan for the Education of Gifted/Talented Students* from TEA and the District Effectiveness and Compliance (DEC) document when setting and prioritizing goals.) In the end, set a one to five year plan that will articulate everyone's goals for the students on your campus. It is at this stage that compromise will be called on by everyone. At minimum, this plan should outline the goals for the regular classroom and the G/T program, who is responsible, what is needed to meet those goals, a timeline, and evaluation. This should reduce some confusion and mis-understanding surrounding your challenging position.

Question: Our district is starting to use portfolios in identifying students for gifted services. I have been asked by my son's second grade teacher to provide information on my son and a product to include in the portfolio. How should I begin?
Answer: *Teaching Young Gifted Children in the Regular Classroom: Identifying, Nurturing, and Challenging Ages 4-9* by Joan F. Smutny, Sally Y. Walker, and Elizabeth A. Meckstroth (1997, Free Spirit Press), offers ideas in a ready-to-go format in Chapter One. There is a form that prompts narrative, a checklist of your child's strengths, and a teacher form that will give you ideas for a child's personal exhibit. *Total Talent Portfolio: A Systematic Plan to Identify and Nurture Gifts and Talents* by Jeanne H. Purcell and Joseph S. Renzullli (1998, Creative Learning Press), is primarily for teachers, but you might be able to get some ideas for the portfolio. Especially helpful information for your situation is found in Appendix C: Elementary Students, and Teachers, Assessment Criteria.

Question: Please suggest some things that I can do to help identify some of my students' interests and/or talents.
Answer: There is a step-by-step book by Joseph S. Renzulli called *Interest-A-Lyzer: Family of Instruments* (1997, Creative Learning Press). It is designed to walk the teacher through the administration and interpretation of interest surveys. The manual provides samples of the instruments and information on purchasing them.

Question: I serve on a district G/T placement committee. We got into a discussion concerning what exactly to look for in talent identification across the grade levels. Do you look for different aspects of talent as the student progresses through the grades?
Answer: Joyce VanTassel-Baska in *Excellence in Educating Gifted and Talented Learners* (1998, Love Publishing Company), talks about how talents are usually exhibited through the school years. She begins by reminding us that very young children (3-5) may exhibit superior abilities in broad, general ways one might think of in terms of basic learning or in natural abilities such as verbal, spatial, musical, etc. As the child progresses through school, one might expect to see the talents become more specific to what we know more as the knowledge areas of school content, social, kinesiology, and fine arts curriculums. By middle school, the students should be identifying their own talents, and preparing to enter the professional world in an area of strength and interest by making proper educational choices that develop those talents further. Care needs to be taken that we stay alert to indicators of talents that do not naturally assert themselves in a typical school setting. Our role as educators and parents is to recognize, nurture, facilitate, and support the talents that emerge.

Question: What is the difference between a gift and a talent?
Answer: One of the best explanations addressing differences between gifts and talents can be found in Francoys Gagné's Differentiated Model ofGiftedness and Talent. A short but thorough explanation can be found in "Definitions of Giftedness and Talent", by Gagné in *Roeper Review*, Volume 20, No. 2, December, 1997, pages 76-85. This widely debated topic is treated in a clear and systematic manner by Gagné. He provides a succinct illustration of his model that addresses an exhaustive list of variables. It is his belief that natural abilities or gifts have certain influences working upon them that encourage or discourage the refinement of those gifts into talents. Gagné's challenge to those in the field of gifted education is to create a common conceptual edifice, beginning with the concepts of giftedness and talent. See also the TAGT publication, *Raising Champions*, by Michael Saylor.

Book Reviews

***They Say My Kid's Gifted: Now What?* by F. Richard Olenchak. 50 pages. Waco: Prufrock Press, 1998.**

They Say My Kid's Gifted: Now What?, a service publication of the National Association for Gifted Children, is a slim but noteworthy book. It is designed as an entry-level book for parents who are unfamiliar with how schools operate and how they respond to gifted children. Its subtitle, *Ideas for Parents for Understanding and Working with Schools*, accurately describes the book's purpose.

The fifty pages of text provide a clear, concise overview of identification of gifted students, a synopsis of program prototypes and options in and out of the regular classroom, and how to appropriately deal with school bureaucracies. For "experienced" parents of gifted children, there is little new information, but for "beginners" in the field of gifted parenting and those who have not dealt with school systems before, this book is simple and user-friendly.

Particularly useful in this book are the appendices that follow the text. There is a short glossary of basic educational terminology, a chart of common characteristics of gifted children, a list of the advantages and disadvantages of various program options, and a list of selected associations for parents. The list of references is not only useful for parents, but would also be an excellent guide for a gifted specialist in building a professional library for parents and educators.

This book more than meets its modest goals and does precisely what i intends to do. For that, I highly recommend that this book be a part of any library for parents of gifted children.

—review by Tracy Weinberg

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***Work Left Undone: Choices and Compromises of Talented Females* by Sally Reis. 428 pages. Mansfield Center: Creative Learning Press, 1998.**

Sally Reis's new book, *Work Left Undone: Choices and Compromises of Talented Females*, does not provide comfortable reading. With research data and anecdotes drawn form personal experience, Dr. Reis challenges the perception of the most ardent feminists — not to mention the traditionalists — with evidence of the price society extracts from gifted women and girls.

Most chilling is the subtlety of messages even the most well meaning family sends to its young girls: ladies have nice manners, ladies are submissive, boys don't like girls who beat them, physics is too hard for you, the prom is where you can shine.

Work Left Undone begins with a look at the "Issues and Barriers Facing Gifted & Talented Women," exploring the choices women make in determining where their energy must lie during various periods of their lives. In adolescence they often must choose between being smart and being popular, running with the crowd or devoting themselves to their art. In young adulthood, women are often forced to choose again between focusing on their careers or on their families. As they grow older, women are expected to provide care for aging parents. With those kinds of choices often reduced to "My Work or Those I Love," women are unable to compete with men who focus their full energies on their careers.

In the second section of the book, "Case Studies of Gifted & Talented Females Throughout the Lifespan," Reis explores the phenomenon of gifted girls receiving lower scores than their male counterparts on standardized tests of math and science even though their grades in school are usually higher. Do girls do less well because they expect to be beaten by boys: are they intellectually inferior, or is sexual bias in instruction and expectations the cause? Reis looks at each factor, realizing that additional research is needed before the question can be definitively answered. Interviews with numerous girls did, however, reveal that the girls themselves attribute the boys' success to intelligence while they attribute their success to hard work, not natural ability.

Finally, Reis offers "Solutions and Recommendations" that range from helping girls to change the image that they have of themselves through sweeping changes in the media to the establishment of strong support systems for women both within an beyond the family. A concise recommendation of what gifted and talented girls, their parents, teachers, and counselors should do as well as an extensive list of resources provides a common sense map to the future. There is indeed a great deal of "Work Left Undone" in helping gifted women and girls maximize their potential, but in this well documented work, Sally Reis makes a significant beginning

—review by Tillie Hickman

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***A Young Person's Guide to Philosophy* by Jeremy Weate, illustrated by Peter Lawman. 64 pages. $16.95 New York: DK Publishing, 1998.**

At last, a quality book about philosophy for young adult readers! In this excellent book, Jeremy Weate (doctorate in European philosophy from University of Warwick, England) makes the leading figures in western philosophy understandable and attractive to the young reader. The introduction presents some basic philosophical concerns in easy to understand terms: Why am I here? Am I dreaming? What is good and bad? It also includes contemporary questions such as: Is a computer virus alive? Am I an android? Is time travel possible?

The first section is a history of western philosophy through the lives of great philosophers including Socrates, Plato, Aristotle, Hypatia, Descartes, Kant, Hegel, and more modern figures such as Simone de Beauvoir, Derrida, and Marcuse. Each person is covered on two facing pages, with fascinating illustrations by Peter Lawman. Basic philosophical ideas are presented along with a significant quote. Historical and interesting biographical information are included, and photographs and period illustrations help put the philosopher in historical perspective.

A detailed description of the schools of philosophy follows, showing, for example, that Aristotle was a Materialist, but pointing out that so was Karl Marx. Other schools discussed include Idealists, Pragmatists, Rationalists, Phenomenologists, and Feminists. A concise glossary, with explanations of various terms and expressions used by philosophers, closes the volume.

For middle and high school students, this book provides an excellent introduction to the field of philosophy, and to some of the greatest minds of the past; it also points out how philosophy is a vital part of everyday life. As a class text or reference, this engaging book will assist students in dealing with abstract concepts.

—review by Michael Cannon

Still Looking for the "Promised Land"

Michael W. Cannon

In the process of putting this issue together, I was talking with a colleague from out of state who referred to Texas as the "promised land of gifted education." I was at first surprised by this label, in light of the problems and difficulties we face in trying to provide a challenging education for gifted children. But on reflection, I decided that perhaps it is somewhat appropriate. After all, we have the *Texas State Plan for the Education of the Gifted/Talented* and the legislative mandate for services. While not the Ten Commandments or even the United States Constitution, they is certainly provide a focused direction and a strong vision for educating the especially able learners in the state.

But as helpful as these documents are, they may stimulate a tendency toward complacency, an unspoken satisfaction that, yes, things are pretty good for gifted education in Texas. Not that we aren't aware of problems or that we don't understand the need to be constantly vigilant. On the whole, however, we pretty much feel that we *know* what giftedness means and how it should look.

We advocate activities for children that provide opportunities for divergent thinking, but may find divergent views on gifted education somewhat threatening.

Sometimes this can lead to a certain narrowness of outlook on the subject of gifted education. If we know perfectly how gifted education should look, then we may be less open to a different perspective. We advocate activities for children that provide opportunities for divergent thinking, but may find divergent views on gifted education somewhat threatening. Oddly enough in such a democratic society as ours, we are at times loathe to listen to other opinions. But is the imposition of a single viewpoint ever really justified?

Different views enable us to continue to make progress. As Sir Karl Popper, the Austrian-born British philosopher, noted in *The Open Society and Its Enemies* (1966), "A society that allows critical discussion and opposition will almost certainly be more effective at solving the practical problems." Criticism, implied or overt, is one of the chief ways that we can continue to make progress in our understanding of gifted students. It is often the radical view, the proposal that seems to attack all that we hold to be essential, that either spurs us on to examine our beliefs, or makes us see the flaws we had ignored in the past.

Progress in G/T education, as in any field of knowledge, comes not from piling up more and more certainties to prove what we already believe, but by being ready to replace the current idea with a better one when the evidence supports it. The creation and perpetuation of an ideal system for educating gifted learners is neither justified nor, in reality, possible.

In Mary Chase's play, *Harvey*, the character Elwood P. Dowd (friend of the giant eponymous rabbit/pooka) finds himself at the center of a potentially disagreeable controversy, and he looks at it, not as a problem, but as an opportunity for involvement of all concerned. "An element of conflict in any discussion is a good thing. It means everybody is taking part and nobody is left out. I like that."

Not a bad way to approach a difference of opinion.

Spring 2000
Evaluation and Assessment

Assessment and evaluation are recurring processes in G/T education, whether in identification, programs and curriculum, or student performance. Articles addressing the evaluation and assessment of students in G/T programs, evaluation of programs and/or curricula, and assessment elements of identification are only some of the possibilities for contributers.

The deadline for submission of articles is **December 1, 1999.**

Summer 2000
Issues in Curriculum for Gifted Learners

Curriculum is one the key elements in G/T education and it has been approached in a number of ways. What are the most successful models? What new possibilities are there? What are the big issues and concepts in curriculum today? Which models/approaches are in contention and why? Thoughtful articles dealing with all gifted curriculum issues are welcome.

The deadline for submission of articles is **March 1, 2000.**

Guidelines for Article Submissions

***Tempo* welcomes manuscripts from educators, parents, and other advocates of gifted education.**
***Tempo* is a juried publication and manuscripts are evaluated by members of the editorial board.**
Please keep the following in mind when submitting manuscripts:

1. Manuscripts should be between 1000 and 2500 words on an upcoming topic (see topics above).
2. Use APA style for references and documentation.
3. Submit **three copies** of your typed, double-spaced manuscript. Use a 1 1/2 inch margin on all sides.
4. Attach a100-150 word abstract of the article.
5. Include a cover sheet with your name, address, telephone and FAX number and/or e-mail address.

Send all submissions or requests for more information to:
Michael Cannon, TAGT Editorial Office, 5521 Martin Lane, El Paso, TX 79903

Texas Association for the Gifted and Talented Membership Application

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